

WESTERN INDUSTRY



• Pacific Northwest lumber in the making: high-climber on his way up a spar tree to repair rigging. For details see page 5.

IN THIS ISSUE: An Incentive Plan That Hiked Wages 40%, Output 50%; How Careful Hiring Cancels Expensive Labor Turnover; Tips For Auto Parts Suppliers; "Tooling Up" to Control Costs; Streamlining Catches Up to Frozen Foods; How Delivery Costs Were Halved

Thirty-Five Cents

VOLUME XII

NUMBER 10

October, 1947

DRAKE STEEL

Sign of service . . .

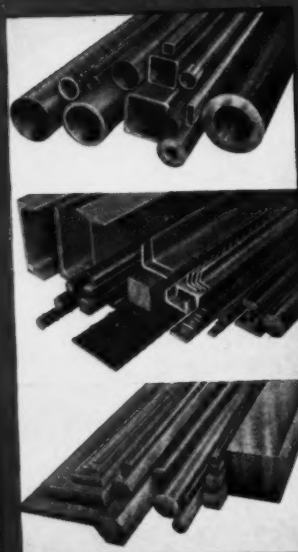
Steel supplies continue to be below normal, but in order to give you the best service DRAKE has expanded its Los Angeles facilities and recently built a new warehouse at Fresno, Calif. Many of the products listed below are on hand in reasonable quantities. Whether you need one piece or a truck load, you receive the same courteous service from Drake. Write for latest catalog.

Quality products

TUBING: Welded and Seamless
Round—Square—Rectangular
Drake Tubing and Pipe

STEEL: Hot-rolled
Bars and Shapes
Plates and Structurals

STEEL: Cold-finished
Rounds—Squares—Flats
Precision Shafting



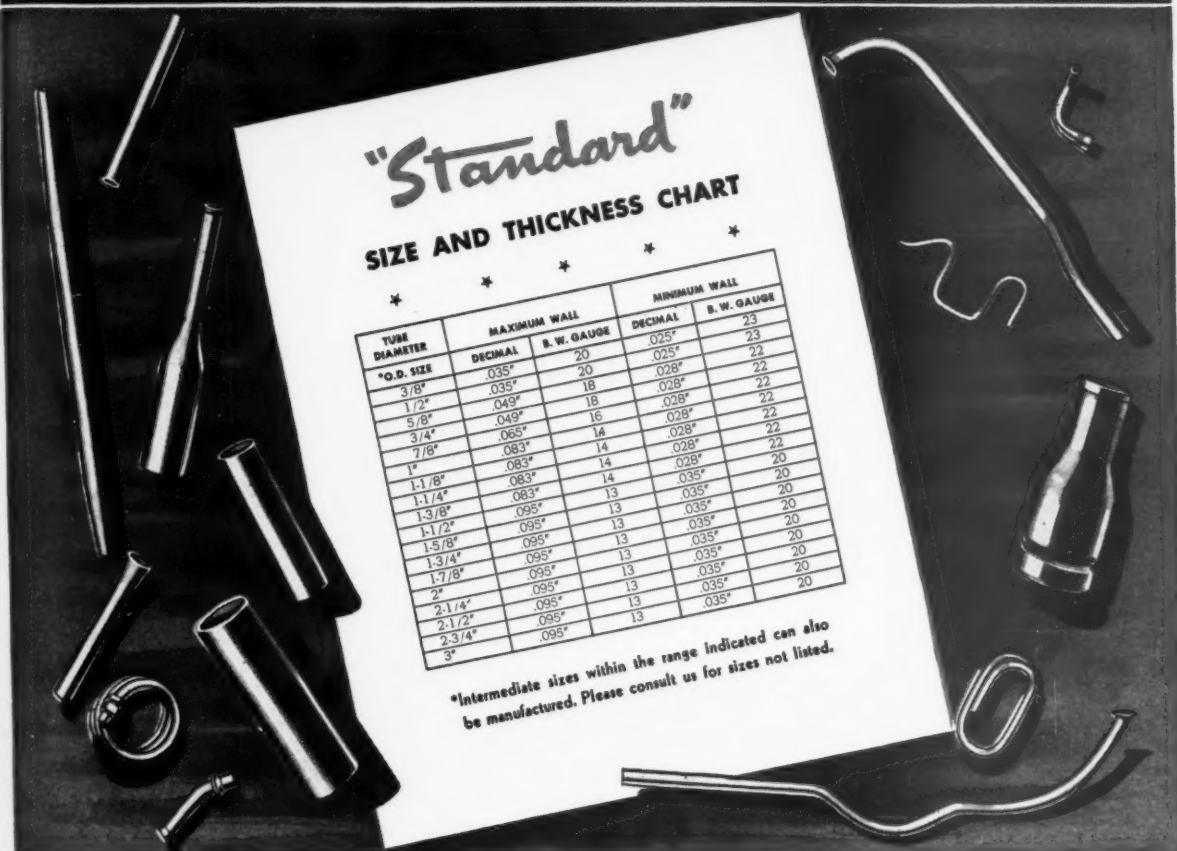
DRAKE STEEL SUPPLY CO.

10660 S. Alameda St.
Los Angeles 2
Phone LUcas 6241

2700 Espee Ave.
Fresno
Phone 4-2806

39 South Park Ave.
Tucson
Phone 2454

NOW AVAILABLE "Standard" WELDED STAINLESS STEEL TUBING



"Standard"
SIZE AND THICKNESS CHART

| TUBE DIAMETER *O.D. SIZE | MAXIMUM WALL | | MINIMUM WALL | |
|--------------------------------|--------------|-------------|--------------|-------------|
| | DECIMAL | B. W. GAUGE | DECIMAL | B. W. GAUGE |
| 3/8" | .035" | 20 | .025" | 23 |
| 1/2" | .035" | 20 | .025" | 23 |
| 5/8" | .049" | 18 | .028" | 22 |
| 3/4" | .065" | 16 | .028" | 22 |
| 7/8" | .083" | 14 | .028" | 22 |
| 1" | .083" | 14 | .028" | 20 |
| 1-1/8" | .083" | 14 | .035" | 20 |
| 1-1/4" | .095" | 13 | .035" | 20 |
| 1-3/8" | .095" | 13 | .035" | 20 |
| 1-1/2" | .095" | 13 | .035" | 20 |
| 1-5/8" | .095" | 13 | .035" | 20 |
| 1-3/4" | .095" | 13 | .035" | 20 |
| 1-7/8" | .095" | 13 | .035" | 20 |
| 2" | .095" | 13 | .035" | 20 |
| 2-1/4" | .095" | 13 | .035" | 20 |
| 2-1/2" | .095" | 13 | .035" | 20 |
| 2-3/4" | .095" | 13 | .035" | 20 |
| 3" | | | | |

*Intermediate sizes within the range indicated can also be manufactured. Please consult us for sizes not listed.

Many Analyses for Numerous Applications

With more than a quarter of a century experience in the manufacture of Welded Carbon Steel Tubing, we have now added to our line, "Standard" Stainless Steel Tubing produced by the atomic Hydrogen Welded process.

"Standard" Stainless Steel Tubing can be furnished in the various analyses such as Type 302 - 304 - 316 - and 347.

"Standard" Stainless Steel Tubing is available for Mechanical, Pressure, Structural and Ornamental applications. Specify "Standard" and get the best.

STANDARDIZE WITH "STANDARD"—IT PAYS

October, 1947—WESTERN INDUSTRY



Also Producers of Electric Welded Tubing

★ Pacific Coast Representatives ★
LAWRENCE-TOTTEN COMPANY, 714 W. Olympic Blvd., Los Angeles 15, Cal.
LAWRENCE-TOTTEN COMPANY, 55 New Montgomery Street, San Francisco 5, Cal.
THE NATIONAL CO., INC., 427 Smith Tower, Seattle 4, Washington
NATIONAL STEEL SALES CO., INC., 815 S. W. Front Street, Portland 4, Oregon
UNION HARDWARE & METAL CO., 411 E. First Street, Los Angeles 54, Cal.
THE PACIFIC PIPE COMPANY, 160 Spear St., San Francisco 3, Cal.
*Complete Tube Stocks Maintained at This Point



COLD FINISHED BARS

In addition Pacific Tube Company produces C1018 - C1019 - C1022 in various finishes, sizes and shapes including drawn, ground and polished.

Write or phone for any information on cold finished steel bars or tubing.

- COLD DRAWN BAR STOCK - $\frac{1}{2}$ " TO $1\frac{3}{4}$ " DIAMETERS.
- SEAMLESS STAINLESS TUBING - .010" TO 2" O.D.
- WELDRAWN STAINLESS TUBING - .010" TO $\frac{3}{8}$ " O.D.
- SEAMLESS ALLOY TUBING - .010" TO $2\frac{1}{2}$ " O.D.
- WELDED CARBON TUBING - $\frac{3}{4}$ " TO 3" O.D.
- SEAMLESS CARBON TUBING - .010" TO 2" O.D.

PACIFIC TUBE COMPANY

West Coast Distributors for **SUPERIOR TUBE CO.**

San Francisco Representative • R. J. FUITE, 780 NATOMA ST., SAN FRANCISCO 3, CALIF.

5710 SMITHWAY • LOS ANGELES 22, CALIFORNIA • ANGELUS 2-2151

HOVEY ASSOCIATES • Advertising • 6411 Hollywood Blvd. • Los Angeles 28, Calif.

This Month in WESTERN INDUSTRY

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Front Cover

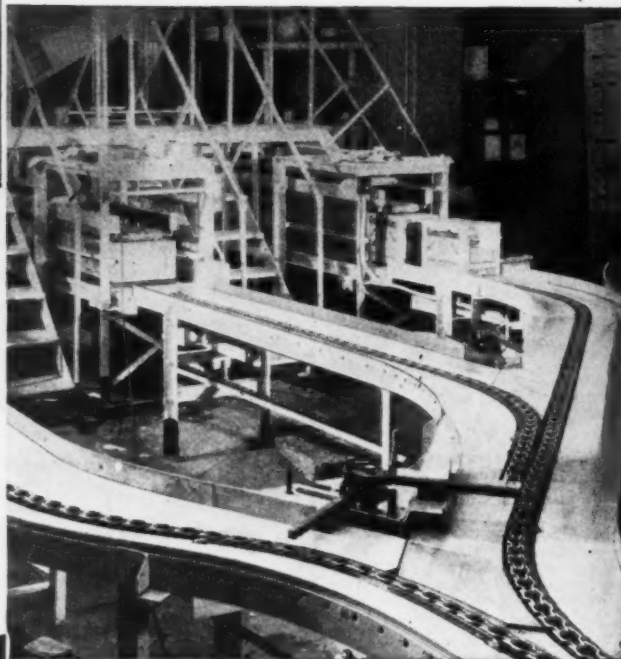
To fill the aching void of requirements for commercial and industrial construction and residential housing, the West's big "tree crops" — fir, spruce, cedar, hemlock, pine, and redwood — are very much in demand over the entire nation. Picture from West Coast Lumbermen's Association, Portland.

A "Good Turn" for your handling systems . . .

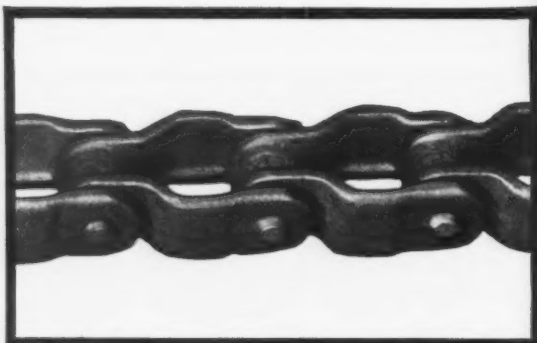


Rex Double Flex Chain

① **REX DOUBLE FLEX CHAINS** provide a "good turn" for your plant carton or box conveyors. Their unique construction enables them to flex in two planes, simplifying conveyor set-ups and enabling you to make the most effective use of floor space.



② **IF YOU'RE PLANNING** to modernize your plant, you'll find the ability of Rex Double Flex to weave around obstructions a big help in setting up the most efficient conveyor system. With the application assistance of the Rex Man this plant installed a carton conveyor that considerably simplified handling problems. Note the manner in which the chains can be turned to converge at one delivery point. Chains can be used on horizontal planes or to elevate equipment. They provide an ideal means of carrying cartons and boxes into and away from plant unloading or delivery points.

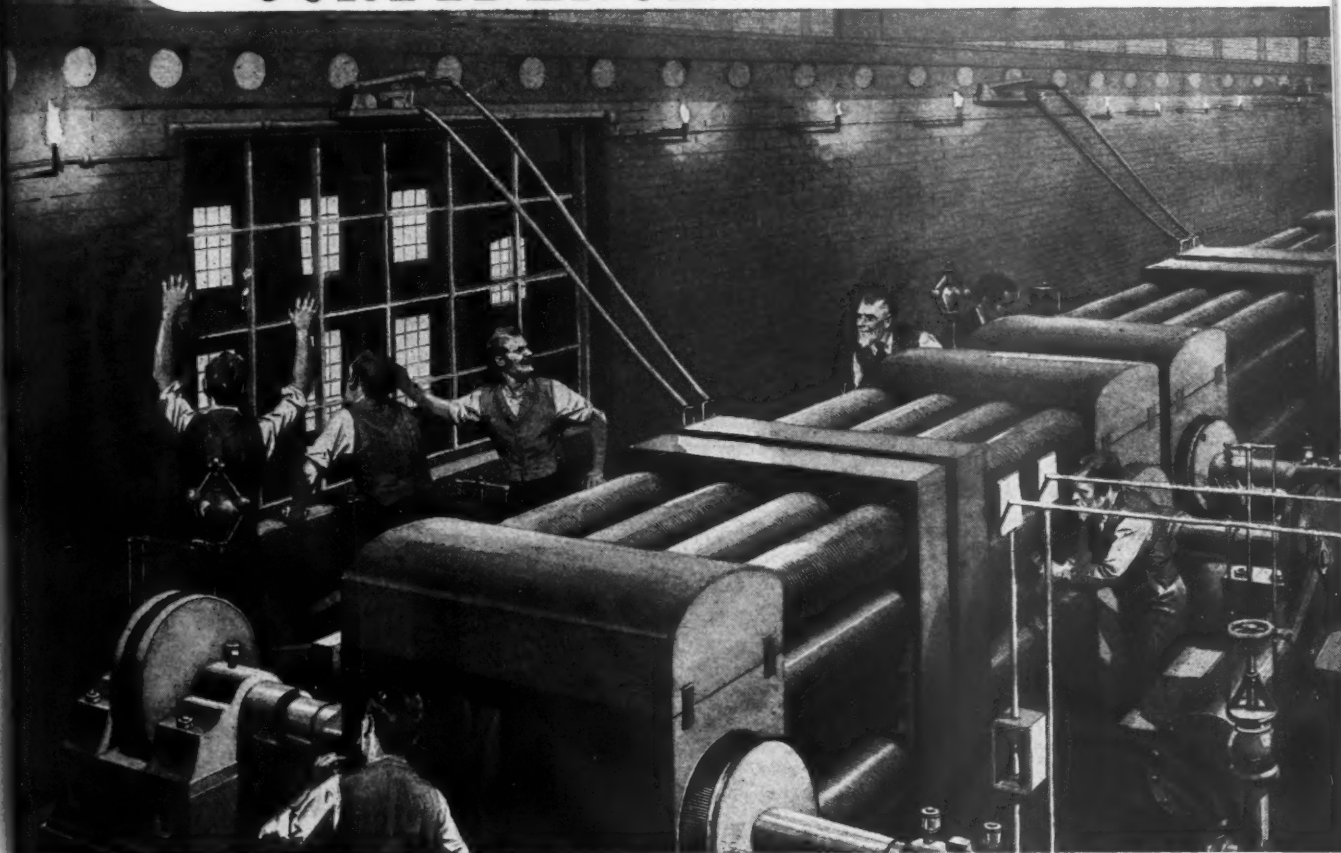


③ **AS THIS CLOSE-UP** indicates, the transverse flex of Rex Double Flex SM-120 Chain is accommodated by loosely fitting pins. This chain is made of Rex Z-Metal, which provides maximum resistance to corrosion and abrasion. Links have added wearing surfaces on the sliding edges. The Rex Man will be glad to assist you in applying Rex Double Flex to your conveyors. For all the facts, write Chain Belt Company, 1723 West Bruce Street, Milwaukee 4, Wisconsin.

REX CHAIN BELTS

CHAIN BELT COMPANY of Milwaukee

CONFIDENCE... how much is it worth?



IN 1880, when electric lights first were tried on New York's Broadway, Roebling's confidence in the future of electricity motivated a new Roebling undertaking . . . the manufacture of electrical wire and cable.

Roebling's contribution to this great industry during the past sixty-seven years is a matter of record. Its leadership was attained and is being maintained by rigid high standards of quality . . . tireless development of superior products, better processes, and more efficient methods.

Your confidence in Roebling is valued by every Roebling employee. His income depends upon his ability to preserve that confidence. Every Roebling employee knows that you will continue to prefer the output of his hands only if he produces better products and gives you better service. Your confidence in Roebling is Roebling's best salesman.

This applies, not only to electrical wire and cable, but to all Roebling products.

WIRE ROPE . . . ONE OF THE FIRST

Wire rope, the first product manufactured by Roebling, plays an important part in every industry. Its economical use depends upon its proper application, and hundreds of men in your industry have found a cooperative and helpful friend to lend a hand when they were puzzled with wire rope problems. He is their Roebling Field Man.

They find that he really knows wire rope and its applications, yet never hesitates to call on the Roebling Engineers and the Roebling Development and Testing Laboratory.

We, here in Trenton, are constantly being reminded by grateful customers of the ability and integrity of their Roebling Field Man . . . of his honest and successful efforts to prove that the words "Confidence" and "Roebling" are one and the same.

At the right is a listing through which your nearest Roebling Field Man can be contacted. Why not call or write him today? Make an appointment to meet a friend who can save you both time and money on your wire rope installations.

JOHN A. ROEBLING'S SONS COMPANY OF CALIFORNIA

San Francisco • Los Angeles • Seattle • Portland



| | | |
|----------------|--------------------------|---------------------------|
| Atlanta | 934 Avon Avenue | Raymond 2151 |
| Boston | 51 Sleeper Street | Lib. 4373 |
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| Cleveland | 701 St. Clair Ave., N.E. | L.D. 249 & Main 5030 |
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| Los Angeles | 216 S. Alameda St. | Trinity 1261 |
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| Pittsburgh | 855 W. North Avenue | Fairfax 2766 |
| Portland, Ore. | 1032 N. W. 14th Avenue | Broadway 5456 |
| San Francisco | 1740 17th Street | Market 8787 |
| Seattle | 900 First Avenue, South | Main 4992 |

Manufacturers of Wire Rope and Strand • Fittings • Slings • Screen, Hardware and Industrial Wire Cloth • Aerial Wire Rope Systems • Hard, Annealed or Tempered High and Low Carbon Fine and Specialty Wire, Flat Wire, Cold Rolled Strip and Cold Rolled Spring Steel • Ski Lifts • Electrical Wire and Cable • Suspension Bridges and Cables • Aircord, Aircord Terminals and Air Controls • Lawn Mowers

ROEBLING

A CENTURY OF CONFIDENCE



Move Bulk Materials *cheaper* the **LINK-BELT** way

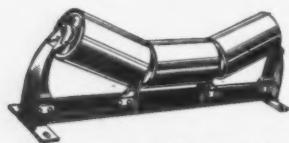
... by Screw Conveyor — —



plings, hangers, troughs, box ends, flanges, thrusts and drives.

Link-Belt manufactures Helicoid, the original continuous flight screw conveyor. Other Link-Belt screw conveyor equipment includes sectional-flight, ribbon and paddle conveyors, as well as a complete line of accessories, such as collars, couplings, hangers, troughs, box ends, flanges, thrusts and drives.

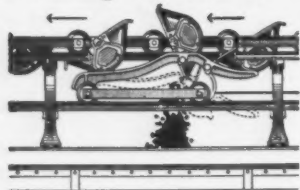
... by Belt Conveyor — — —



light, medium and heavy-duty service.

Link-Belt makes all types of troughing, flat-roll, return and self-aligning idlers, including all accessories, such as trippers, belts, pulleys, bearings, take-ups, etc., for handling a wide range of materials, for

... by Bucket Carrier — — —



There is a type of Link-Belt bucket carrier and bucket elevator for every service—horizontal, vertical or inclined—for handling all kinds of materials at desired capacities. Illustrated is the Peck Overlapping Pivoted Bucket Carrier.



... by Bulk-Flo Conveyor

Simple . . . Versatile . . . Compact . . . Enclosed. Economically handles flowable, granular, crushed, ground or pulverized materials of a non-abrasive, non-corrosive nature in a continuous mass, horizontally, vertically or on an incline, in a single unit. Bulk-Flo is easily adaptable to practically any surroundings.

**LINK-BELT COMPANY, The Leading Manufacturer of
Conveying and Mechanical Power Transmission Machinery**

PACIFIC DIVISION

Plants at San Francisco 24, Los Angeles 33, Seattle 4.
Offices and Warehouses: Portland 9, Spokane 8, Oakland 7.

• • •

10,600-P

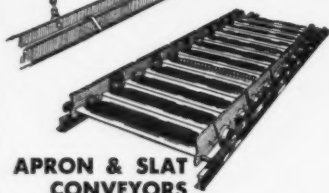
Conveyors and elevators are called upon to do an endless variety of tasks. Each presents its own problems . . . each requires its own solution. From the design to the erection of your conveyor system . . . Link-Belt offer experience, backed by thousands of installations and foresight that has established their reputation as pioneers in the field of continuous movement of materials.

LINK-BELT
makes conveyors
for every purpose —

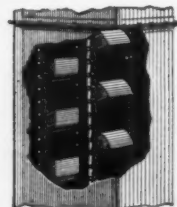
... for lifting materials
or lowering them —
... for moving parts
and packaged materials —
... for conveying parts into
machines for processing —



**OVERHEAD
CONVEYORS**



**APRON & SLAT
CONVEYORS**



**BUCKET
ELEVATORS**



**FLIGHT
CONVEYORS**



**OSCILLATING-TROUGH
CONVEYORS**

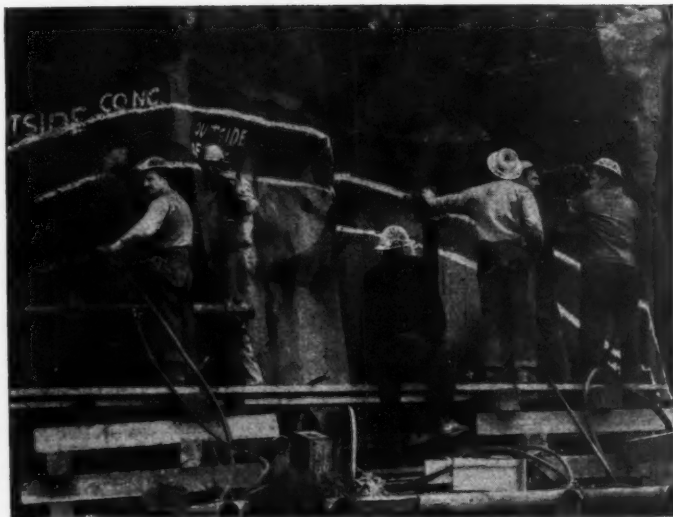


LINK-BELT
Conveyors

A TYPE FOR EVERY KIND OF MATERIALS HANDLING

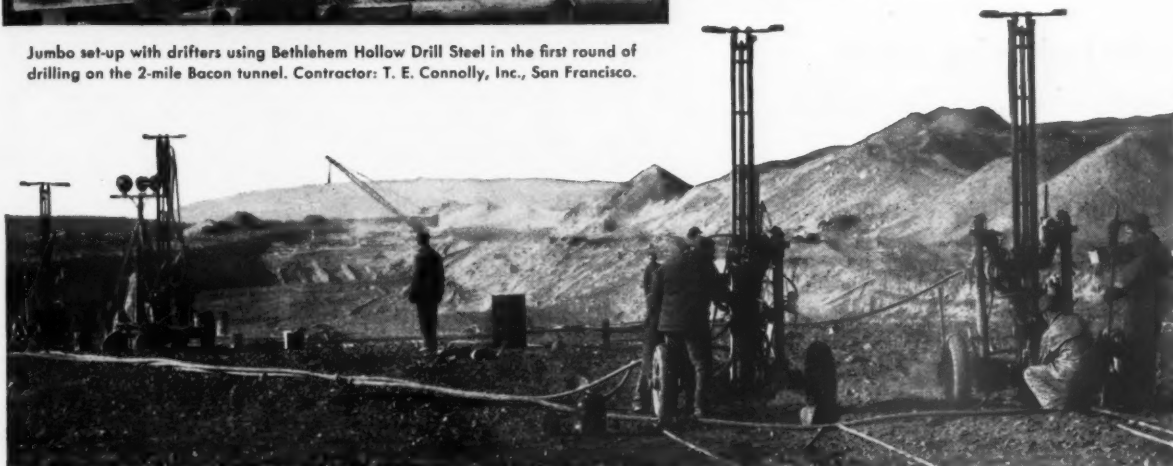
Burrowing through Basalt

TO
IRRIGATE
A MILLION
ACRES



Jumbo set-up with drifters using Bethlehem Hollow Drill Steel in the first round of drilling on the 2-mile Bacon tunnel. Contractor: T. E. Connolly, Inc., San Francisco.

Wagon drills fitted with Bethlehem Hollow Drill Steel biting into basalt rock on the West Canal. Contractors: Utah Construction Co., San Francisco, and Winston Bros., Los Angeles.



When completed, the tunnels, canals and siphons of the Columbia Basin Irrigation Project will carry Grand Coulee water to 1,029,000 arid acres in southeastern Washington. Hundreds of miles of these man-made waterways will help develop lush farmlands where nothing but sagebrush now grows.

The progress made by many of the contractors on this job is

speeded by their use of modern wagon drills, jackhammers and drifters equipped with Bethlehem Hollow Drill Steel. This tough, fatigue-resisting steel is boring steadily through basalt and granite day by day. It is used here with both detachable and forged-on bits, each method giving excellent service.

Bethlehem Hollow Drill Steel

has 4 features of importance. It has a true round, smooth hole . . . it forms a tough shank . . . it is uniform in size . . . it has a wide quenching range.

Consider these features when you're ready to order your next drill steel, and remember there's no better steel made for hard-rock drilling than Bethlehem Hollow.

BETHLEHEM PACIFIC COAST STEEL CORPORATION

Sales Offices: San Francisco, Los Angeles, Portland, Seattle, Honolulu

BETHLEHEM PACIFIC



**COLOR
ENGINEERING**
pays

How many eyes see how well in your plant?

**Color Engineering corrects
causes of carelessness, fatigue,
inefficiency — cuts accident
incidence — increases morale
and productivity**

Make it easy for your employees to work well! They'll respond. Surround them with colors, scientifically selected to ease eye-strain, relax nerves, encourage steady, all-day productivity.

Procedure? Call in a trained Fuller representative. He will survey your plant — building, equipment, production plan — and report *in writing*. Every detail of Fuller's recommendation will be fitted to your particular need. No obligation at all!

Color Engineering by Fuller helps efficiency by painting *out* dreary, fatiguing monotony — painting *in* relaxing colors that up morale and down the costs of carelessness and production delays. Plants all over the West "wouldn't go back to the old colorless scheme." W. P. Fuller & Co. San Francisco. Branches and Dealers throughout the West.

DULL LIGHT

- Apathy
- Carelessness

POOR LIGHT

- Strain
- Fatigue

GLARING LIGHT

- Confusion
- Inefficiency

FREE: 24-page book, "Color Engineering by Fuller."
Full text, full-color photos, charts, safety symbols.
Profitable ideas in every paragraph. Ask for it.

**FULLER
FINISHES**

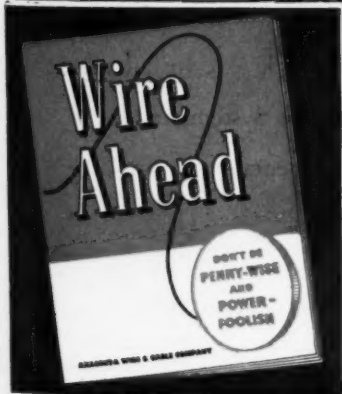


Arrest this Thief!

INADEQUATE WIRING, the industrial jinx, can rob any plant large or small . . . of as much as 25 to 50 percent of rated efficiency. And what's most discouraging, the greater the production load, the deeper he digs into your resources.

Obsolete, overextended, overtaxed wiring may be difficult to detect, but it's too expensive to ignore. You may not be able to see this demon, but your plant power engineer, your consulting engineer, electrical contractor, or utility power salesman can. A little policing now may save expensive alterations later.*

47440



*WIRE AHEAD, a new booklet discussing preventive maintenance . . . the symptoms of inadequate wiring . . . and presenting plans for anticipating electrical demand, is now available on request. Address Advertising Department, 25 Broadway, New York 4, N. Y.



ANACONDA WIRE AND CABLE COMPANY

Skilled hands

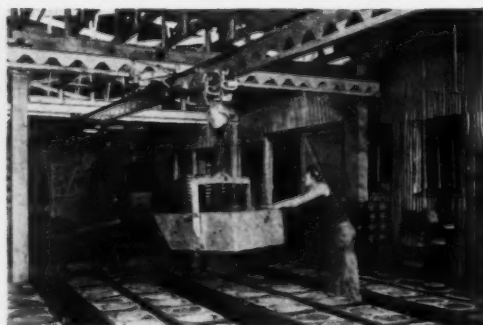


**SHOULD NOT DO HEAVY
OR DANGEROUS LIFTING**



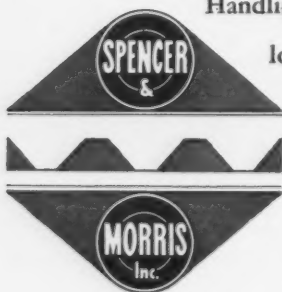
Efficient and safe movement of stock, goods and finished products in the three dimensions, is the purpose of all Spencer & Morris, Inc. equipment. Designing, Fabricating and Erecting the correctly engineered Materials

Handling Systems to move heavy loads with dispatch and economy, has been



A Typical Spencer & Morris Installation

our history ★ Don't let Skilled Hands in your plant do muscle work . . . Install a modern Spencer & Morris System, tailor-made to fit your requirements.



Material Handling Systems

SPENCER & MORRIS, Inc. We do the entire job

MAIN OFFICE AND FACTORY: 5649 ALHAMBRA AVENUE, LOS ANGELES 32, CApitol 5103
580 MARKET STREET, SAN FRANCISCO 4, SUtter 1-1715

HIGHLY COMPACT....

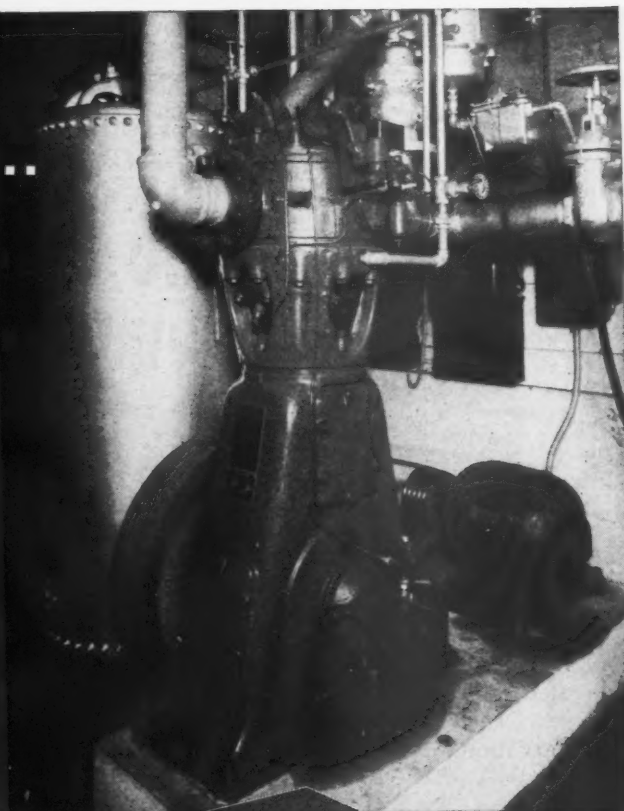
ECONOMICAL

**HEAVY
DUTY**

AIR

COMPRESSORS

*that give long
trouble-free service*



SULLIVAN

WG-9

"Always Dependable"

AIR COMPRESSORS
1/4 TO 600 HORSEPOWER



*Consult a
Joy
Engineer*

11 SIZES—153 TO 822 C.F.M.
90 TO 150 P.S.I.

SIMPLE BLOCK-TYPE FOUNDATION.
FULL FORCE-FEED LUBRICATION.
ANTI-FRICTION MAIN BEARINGS.
LONG-LIFE "DUAL CUSHION" VALVES.
CYLINDER LINERS REPLACEABLE
ON THE JOA.

SULLIVAN DIVISION

JOY MANUFACTURING COMPANY

GENERAL OFFICES: HENRY W. OLIVER BUILDING • PITTSBURGH, PA.

each year
INTERNATIONAL HARVESTER
 saved \$200,000.⁰⁰
 by using **WIREBOUNDS**

... \$200,000.00 saved through lower freight charges, reduced shipping damage costs, and more economical handling and storage made possible by Wirebound boxes and crates. Since starting to use Wirebounds eight years ago, company officials estimate that International Harvester has saved more than \$1,000,000.00 in shipping and container costs!

Each year, more than 300,000 Wirebound boxes and crates are used by the Harvester Company for shipping jobs such as these pictured here. Crankshafts, cylinder heads, complete gasoline engines, sheet metal parts and many other items are all shipped more economically and safely in Wirebounds.

Wherever used, Wirebounds can mean extra savings for you through shipping economies. Send the attached coupon for complete information on Wirebound containers. Or, even better, a Wirebound Sales Engineer will call to analyze your shipping problems completely and submit sample Wirebound boxes specially designed to ship your product more economically and safely.



International Harvester Co. ships 75 pounds of tools in this Wirebound box with a tare weight of only 4½ pounds!



This Wirebound box with a tare weight of 5 pounds is constructed to ship 150 to 200 pounds of small parts.



Note compact arrangement of component parts in this Wirebound crate used for shipping cream separators. Note Rock Fastener loop closure.



235 pound bull gear for an International Harvester tractor packed for shipment in a Wirebound box with Rock Fastener closure.

Mail This Coupon Today!

WIREBOUND BOX MFGS. ASSN.
 ROOM 1835, BORLAND BLDG., CHICAGO 3, ILL.

☐ SEND COMPLETE
 LITERATURE

☐ SEND A SALES
 ENGINEER

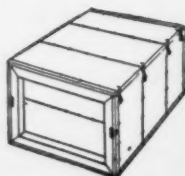
NAME _____ POSITION _____

FIRM NAME _____

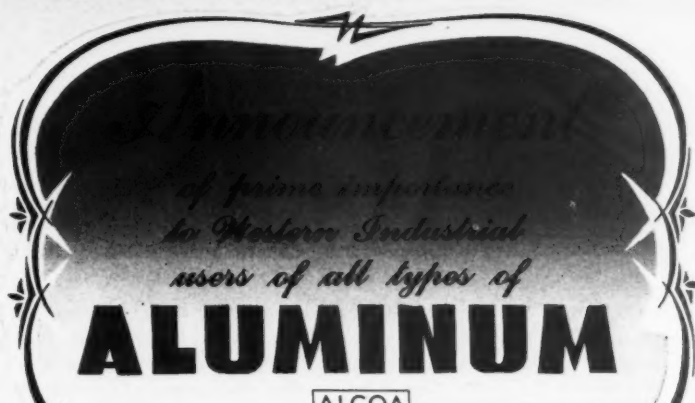
ADDRESS _____

CITY _____ ZONE _____ STATE _____

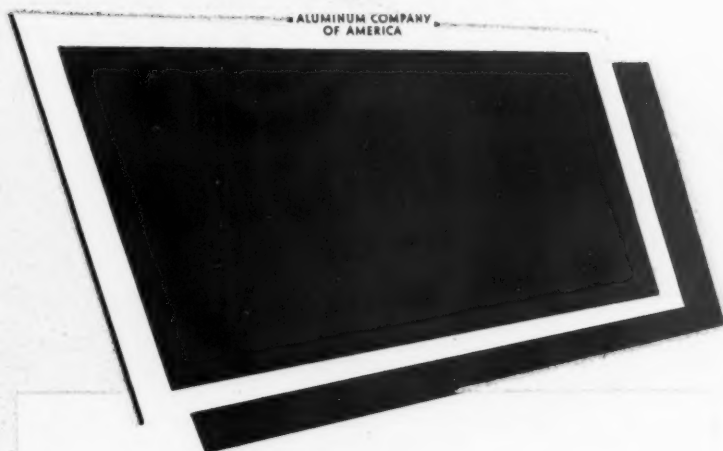
PRODUCT _____



Wirebound
BOXES & CRATES



ALUMINUM COMPANY
OF AMERICA



Aluminum Company of America — major producer of aluminum of every type marketed under the Alcoa name — has selected Ducommun Metals & Supply Co. as an Authorized Distributor. For the past ten weeks, Ducommun has been receiving stocks of standard warehouse products from Alcoa and, metal fabricators are invited to call for every type of industrial aluminum. Dependable Ducommun service will back the Alcoa line.

**Complete Stocks of ALCOA ALUMINUM — Bars
Sheets • Tubing • Wire • Coil Stock • Bolts • Screws
Architectural Shapes • Rivets • Washers • Pipe
Pipe Fittings — are now maintained at DUCOMMUN**

SINCE 1849

DU COMMUN
METALS & SUPPLY CO.

REVERE FREE-CUTTING COPPER ROD

... INCREASES YOUR PRODUCTION

SINCE its recent introduction, Revere Free-Cutting Copper has decisively proved its great value in the precision manufacture of copper parts. The characteristics of this metal are far in advance of anything heretofore offered. In machinability, it is rated in excess of 70% of free-cutting brass, depending upon the type of operation. Parts are produced having an exceptional finish, great accuracy, clean threads, high heat and electrical conductivity.

Revere Free-Cutting Copper is ideal for electrical parts, contacts, switch gear, vacuum tubes, relays, welding and soldering iron tips, home appliance parts. It is oxygen-free, high conductivity

copper to which a small amount of tellurium has been added. This, plus special processing in the Revere mills, accounts for the greatly increased speed with which it can be machined, thus stepping up production and cutting your costs. Write Revere for full details.

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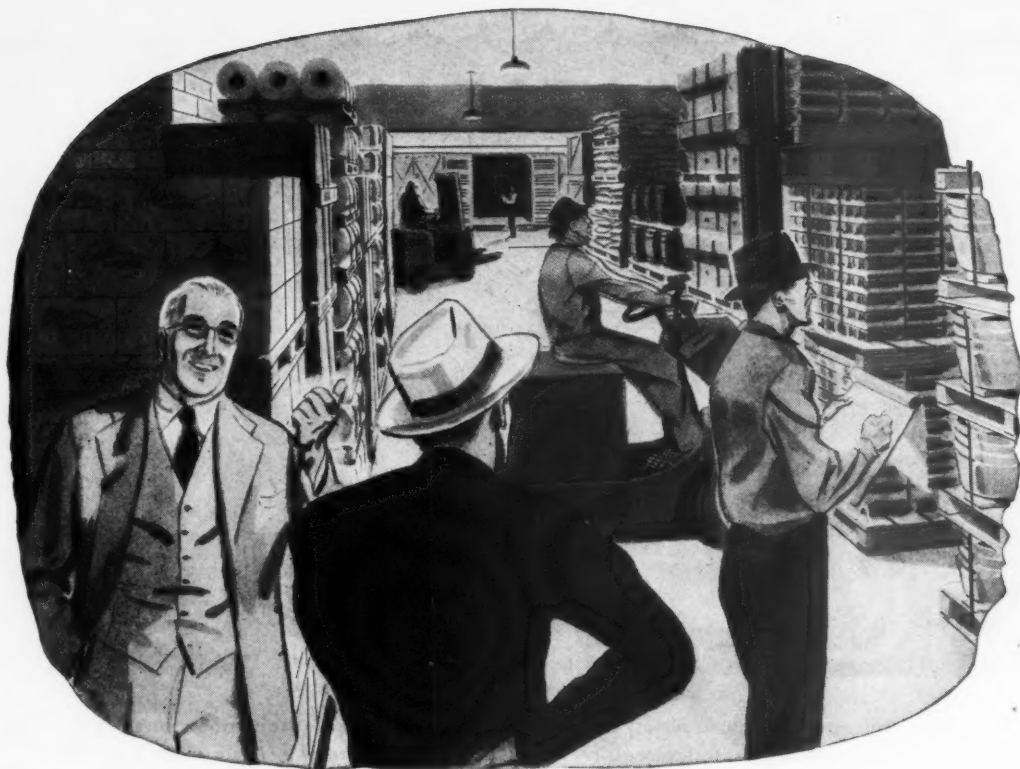
Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; New Bedford, Mass.; Rome, N.Y.—Sales Offices in Principal Cities, Distributors Everywhere.

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"This material seems to machine much better than our previous hard copper bar; it cuts off smoothly, takes a very nice thread, and does not clog the die." (Electrical parts.)
"Increased feed from 1½" to 6" per minute and do five at one time instead of two." (Switch parts.)
"Spindle speed increased from 924 to 1161 RPM and feed from .0065" to .0105" per spindle revolution. This resulted in a decrease in the time required to produce the part from .0063 hours to .0036 hours. Material was capable of faster machine speeds but machine was turning over at its maximum. Chips cleared freely, operator did not have to remove by hand." (Disconnect studs.)



"HANDLING COSTS STAY LOWEST

WITH Battery Powered TRUCKS"

SEND FOR
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MANUALS



Even if your present system is mechanized, the MATERIAL-HANDLING HANDBOOK and UNIT LOADS offer new suggestions for lowest-cost material handling. Your letter will bring them.

"Here's a tip from our experience: Watch over-all costs—not first costs alone—when you compare industrial trucks.

"For a true comparison, all charges—for power or fuel, maintenance, down-time for repairs, as well as interest, depreciation and so on—should be boiled down to one figure, cost per shift operated, for each type of truck.

"Using this yardstick, we found that our material-handling outlay was always lowest with battery power. Reason enough, isn't it, why we've settled on electric trucks?"

Users who compare industrial trucks on the conclusive basis of over-all cost per unit of work done point to these basic savings when storage batteries are the source of power:

USE LOWEST-COST POWER AVAILABLE—Storage batteries bring to mobile

equipment the use of central station power—energy of lowest and constantly decreasing cost. Thus the electric industrial truck demonstrates, consistently, an operating cost well under that of other types.

NO IDLING COST—In the intervals between actual load movements, batteries impose no expense for "fuel" or wear. Not only do they give the needed surges of power instantly, but they cut off instantly—so that there is absolutely no power consumption during stops.

TRIFLING MAINTENANCE COSTS—Batteries have no moving parts. A long record of sales of parts by battery manufacturers shows, on the average, a value of about 85 cents per year for each battery in service. Preventive maintenance takes but a few minutes weekly.

These facts—plus the characteristic ruggedness, dependability and safety of battery-driven units—help explain why over 90% of the electric trucks sold in the past twenty years are still in constant service.

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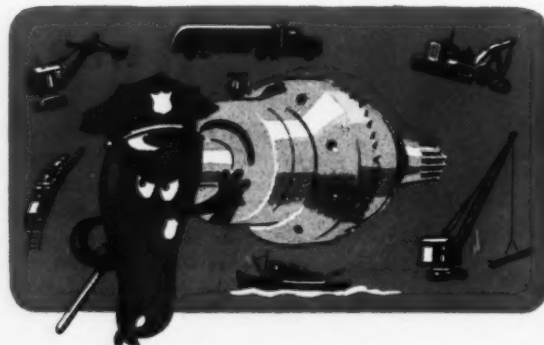
1. UNOBA is the first all-purpose grease in history that resists both heat and water! That's why this *one* grease easily performs the jobs that formerly required *many* different types, grades and brands of greases.



2. UNOBA is a barium base grease with exceptional heatproof, waterproof qualities. Boiling water or dry heat won't cut its tenacious film! At temperatures from below freezing to 300° F. UNOBA protects your trucks and equipment.

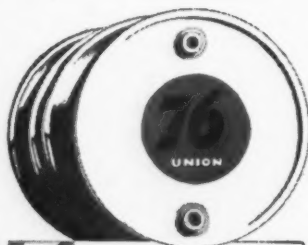


3. UNOBA'S unusual adhesiveness to metal gives maximum protection against rust and corrosion. Because of its remarkable resistance to moisture and heat, UNOBA protects idle equipment against corrosion and rust over long periods.



4. Today UNOBA is performing hundreds of different jobs in all branches of industry, on construction jobs, and on farms. Simplify your lubrication with this unique all-purpose grease that resists *both* heat and water.

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In Our Mail Box

Taft vs. Hartley

Editor, Western Industry:

I have been very much interested in reading the 53 questions and answers on the new labor act, published on pages 38 to 40 inclusive, in your August issue of *Western Industry*.

On page 38 I note the following question and answer:

"Question: Can the checkoff include anything else in addition to regular union dues?"

"Answer: Yes. It can include initiation fees. No special assessments, contributions to union funds or other levies are permitted to be checked off by the company for the union."

This interpretation seems to be contrary to that of the interpretation placed on the act by the legal staff of the Los Angeles Merchants & Manufacturers Association, National Association of Manufacturers and others, who agree that under the terms of the law, checkoff must be confined strictly to regular monthly dues. This naturally creates some confusion in our minds, particularly at a time when this is a controversial matter in our negotiations with three CIO unions. I would, therefore, be very much interested in knowing the correct interpretation covering this particular point.

B. F. CAKE, Vice-President
Gladding, McBean & Co.
Los Angeles 26, Calif.

Editor, Western Industry:

With reference to the inquiry of Mr. B. F. Cake regarding the "Checkoff" and what it includes, I might say that we took Senator Taft's interpretation of the Act as against that of Representative Hartley. Senator Taft has argued that the checkoff of union dues may also include initiation fees as well as some other assessments. Congressman Hartley, however, stops short at straight union dues.

We felt that initiation fees might be construed as a part of union dues because while Sec. 302 (c) (4) of the Labor-Management Relations Act stipulates just "dues in a labor organization," initiation fees are coupled along with dues in Sec. 8 (b) (3) covering reasons for dismissal after union expulsion under union security rules.

I realize that this is merely an interpretation, and until the matter is definitely cleared up by the Courts or the NLRB, it may be best to stick to straight union dues only.

B. B. BENDINER
Associate Editor
Collective Bargaining Bulletin
New York 18, N. Y.

Keeping Better Labor Relations

Editor, Western Industry:

The article on Portland Labor-Management affairs is well and fairly written, and I hope it will be widely read. There is certainly much encouragement to us in that the plan has received national recognition. It is working out well here in Oregon, and there is no reason why the plan should not be adopted in other cities, whether along the simple lines on which we operate or on the more complex so-called Toledo Plan, which is now being studied by representatives of labor and management in Seattle.

Thank you for covering this subject so well and completely, and assuring you of our wil-

EDITORIAL COMMENT

Tied to the Government's Cart

BECAUSE the federal government, controlling a vast portion of the West's resources, is trying to economize, the West's economic development is being slowed down, according to Dr. J. R. Mahoney, the University of Utah's economic specialist.

Dr. Mahoney, who has been in Washington for the last six months on research work for the government, laid this vital Western problem before the Commonwealth Club of San Francisco recently in a talk that proved his pioneer championing of the Geneva steel mill as a vital factor in the West's economy was only preliminary to a much wider view of the West's entire future.

"It is ordinarily assumed that public activity is postponable and subject to control and therefore can compensate for private enterprise (low government spending in prosperity and high spending during a depression)," he said.

"But these projects in which we are interested are at the heart of our economy. The results that flow from them fit into the whole economy and are too important to wait for a depression. They are no more postponable or less important than private enterprise. Postponement of power projects, for example, may in the very nature create circumstances where the development of the whole region is blocked."

The situation is one peculiar to the West, and calls for deep study of water, power, minerals, forests and other resources. As a wise prophet, Dr. Mahoney offered no specific answer to the problem, but advised us to open our eyes.

"We have made many studies on parts of states or sub-sections, or regions comprising more than one state, but not one to study the entire West as it enters a more mature stage of economy," he pointed out. "It would uncover our problems and coordinate them for possible solution. Many studies are not sound when you look beyond the state borders. We should take longer looks into the future. An overall planning agency is not needed, but one on a voluntary cooperative basis to develop research to establish policies for the solution of problems coming at a faster rate."

The time for thinkers has come, and more of Dr. Mahoney's type of thought is needed by the West.

Everybody Should Participate

IT SEEMS that our editorial in the August issue objecting to the apparent absence of any specific efforts by industry to get unnecessary government expenditures reduced did both Lane Webber of Southern California Edison and the NAM an injustice. Actually a great deal of excellent spade work is being done, with Mr. Webber one of the most tireless spade-wielders in the bunch, but these efforts have not been publicized to the extent that business men in general are thoroughly aware of the fact that governmental budgets are being analyzed by industry at the request of Congressional committees and revisions recommended.

It should not be considered just the task of some distant group in Washington to tackle this problem of getting our government on a more business-like basis, but a grass-roots effort in which every local organization interested in public affairs considers it a primary job to take some part in the task.

We repeat what we said in the August issue, to wit:

"Why could not organizations each assign a committee to study a specific government department or bureau? Why could not NAM or the U. S. Chamber of Commerce take on themselves the task of doling out study assignments to groups willing to do their bit? Out of such projects could come some real results."



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singness to help you in any way we can on other problems in the Pacific Northwest.

SID WOODBURY
President
Portland Chamber of Commerce
Portland 4, Oregon.

Editor, *Western Industry*:

At a meeting of the board of directors of Portland Labor-Management Committee, I was requested to write you, expressing the appreciation of the committee for your fine article, regarding industrial relations on the Pacific Coast, which appeared in your August issue of *Western Industry*.

We of the Portland Labor-Management Committee definitely know that we can and are working out our problems as you have outlined in the article. Naturally, the entire Pacific Coast can benefit by good relations of labor and management working constructively and cooperatively together in the location of industries, but far more important is the economic results upon the human lives of the people by good labor relations.

Your publication has helped very materially to contribute to these objectives.

L. C. STOLL
Chairman, Portland Labor-
Management Committee
Portland 5, Oregon.

Editor, *Western Industry*:

The article about Portland Labor-Management Committee which appeared in your August issue of *Western Industry* is valuable publicity which I feel sure will be helpful to our program.

E. C. SAMMONS
President, U. S. National Bank
Portland, Oregon.

Editor, *Western Industry*:

It is my opinion that the article on the Labor-Management Committee will have some value relative to keeping better labor relations in our area and may also be of some importance to other areas. I might add that I was personally pleased with the item.

ROY C. HILL
Business Representative
Painters Local Union No. 10
Portland 4, Oregon.

Editor, *Western Industry*:

Regarding the article in your August issue, reviewing the work of the Portland Labor-Management Committee, publicity of this kind, in my estimation, does more to foster friendly relations between employers and employees, and I am happy to state that the Portland Labor-Management Committee has been the answer to many industrial labor relations problems in this area. I am firmly convinced that peaceful permanent solutions to labor relations problems can be better consummated mutually, than the passing of a lot of anti-labor legislation.

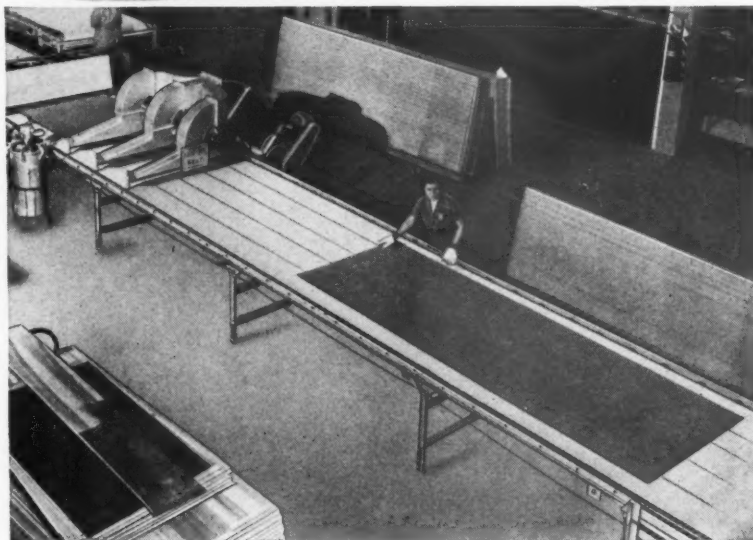
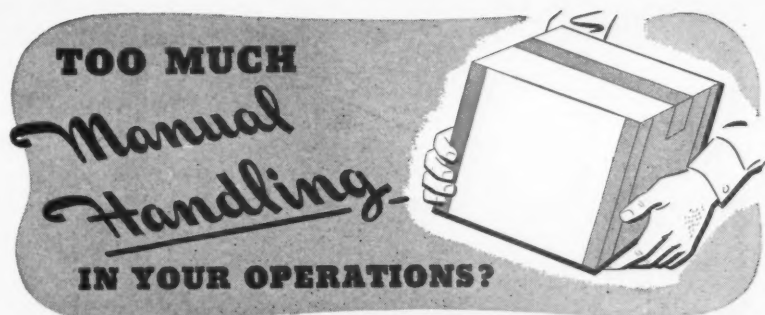
Mr. L. C. Stoll, chairman of the committee, has been the guiding factor in the set-up, and I would like to express our appreciation for the work he has done in his capacity as chairman.

JOHN GILLARD
Business Representative
U. A. Local Union No. 235
Portland 1, Oregon.

Editor, *Western Industry*:

It was with real pleasure that I read the article in your recent issue concerning the Portland Labor-Management plan for industrial peace.

Your recognition of our basic objectives and of our methods for insuring the continuing, uninterrupted movement of production and business comes at a time when labor and management both need, more than ever, the stabil-



BELT CONVEYORS may be the Answer ... Ask STANDARD CONVEYOR!

MANUAL handling is costly in time, manpower and space—the less of it you have the lower your costs in manufacturing, processing or storage handling.

Investigate conveyors—belt conveyors for example. Belt conveyors are amazingly versatile. They handle small packages as easily as bulky crates—articles need not have a smooth bottom or surface as they do not “roll” but ride the belt. The belt itself may be stitched canvas, rubber, white woven, wire mesh or steel.

Speed of travel can be controlled to a few feet or a hundred per minute. Conveyors can be inclined, declined, horizontal or a combination of all three and equipped with transfer and elevating arrangements. A single unit of belt conveyor can be made longer than any other type of power conveyor. The range of application is practically limitless.

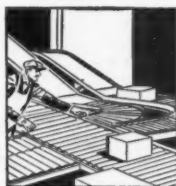
We suggest you look into all the things belt conveyors can do—the many ways they can earn money for you.

Standard Conveyor makes power and gravity conveyors in belt, roller, chain, and slat types; spiral chutes, inclined elevators, tiering machines, portable pilers, pneumatic tube systems. Write for Standard's valuable reference book WI-107 on conveyors and conveying methods.

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izing effect of mutual interest and understanding.

We would like to see the so-called "Portland Plan" spread to other communities, not only on the West Coast, but throughout the entire nation.

We believe, and we have proven, that collective bargaining can be carried on in a mature, constructive and beneficial manner.

We hope that your publication—and other business and industrial publications—may continue to espouse the cause of the "Portland Plan" so that other cities and sections of America may someday achieve the balanced labor-management relationship.

Industrial labor relations will only succeed if both parties, the employer and employees' representatives, strive for understanding and meet each other half-way.

JACK SCHLAHT
Secretary, Local No. 162
General Teamsters,
Auto Truck Drivers and Helpers
Portland, Oregon.

Eighth Advantage of Pallets

Editor, Western Industry:

For the reason that Douglas fir pallets form a considerable item in our Coos Bay, Oregon, production, we were interested in the comments of California Walnut Growers Association on the value of palletizing. Could we add to the seven advantages listed, another one, which has been noticed by many of our customers?

We refer to the ease with which palletized storage can be inventoried. There being a given number of sacks to each pallet, it is a simple matter to quickly make an exact tally of the merchandise on the floor.

EDGAR A. BROWN
Mgr. Southern Calif. Office
Evans Products Co.
Coos Bay, Oregon.

Dieselizing the Streamliner

Editor, Western Industry:

It was our thought when we put out the new Streamliner that the diesel power handling these trains would handle them between Minneapolis and Seattle without change of power.

We have territory between Othello, Washington, and Avery, Idaho, that is not electrified, and if diesel power were not used we would have to change engines at both of these points and use steam power, which of course has a delay on the road for oil, water and other servicing.

Diesel power can be serviced at Tacoma, Othello and Deer Lodge and keep the same engine in the train which, of course, saves many precious minutes in moving the Streamliners on their fast schedule.

At this time we do not plan to handle any other train but the Streamliner with diesel power.

C. A. NUMERDOR
Supt. of Transportation
Chicago, Milwaukee, St. Paul &
Pacific Railroad Co.
Seattle 1, Wash.

Likes Disser Articles

Editor, Western Industry:

I am very much interested in two articles on "Mass Production," appearing in your July and August issues, written by Mr. Louis Disser, executive of the Ford Motor Co. I would appreciate very much your forwarding these two particular issues to me.

PAUL S. REYNOLDS
District Manager
Automobile Club of Southern California
Hollywood 28, California.



THIS TRUCK Adds a Story TO YOUR WAREHOUSE

THE extra space you looked for down the length and across the width of your warehouse, the Crescent PALLETIER finds high above the floor. With the reach of a giant, the PALLETIER stacks pallet loads to the rafters. It may double your storage capacity... save the cost of a new building.

Hour after hour, the Crescent PALLETIER lifts, totes, tiers, climbs ramps, speeds loading and unloading... shrinks handling time and costs.

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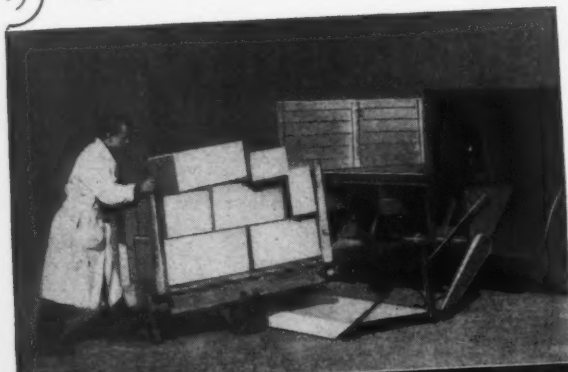
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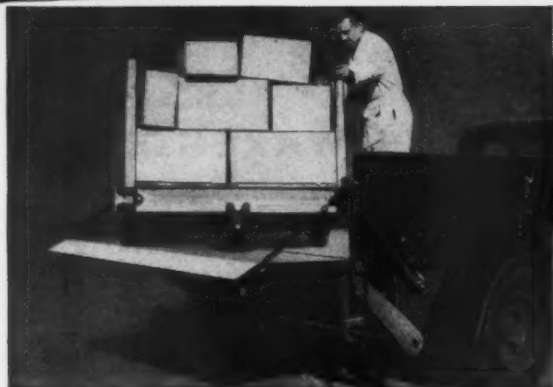
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Make pick-ups and deliveries anywhere. No loading docks are needed with an Elevating Endgate on the job. Note the tapered lip. Simply truck or slide on your loads. Centering of the weight is unnecessary with a Fruehauf.



Fruehauf Endgate is the hydraulic helper with the "Giant Lift". Note the simple finger-tip control that starts or stops the Endgate at any level. Travels from ground to truck-bed in just 10 seconds.



Stops automatically at ground or truck-floor level. Extends the load-carrying capacity of your truck or swings up into position as any conventional tailgate. It's simple, positive and safe to operate.

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**ELEVATING
ENDGATE**

FOR TRUCKS AND TRAILERS

THE WESTERN OUTLOOK...News...Statistics...

1

Seasonal upsurge sets new employment records, but Coast manufacturing totals below 1946; fruit canning picture brightens considerably; electric power loads 10 per cent above last year; Army promises cooperation in releasing steel scrap; freight car shortage hampers the lumber movement; more beet sugar is in sight

Employment Picture

By David E. Christian

THE seasonal upsurge is continuing to create new employment records for each successive month so far in 1947. In the coastal states, the only ones for which August information is available at this writing, non-agricultural employment is now well above 4,500,000, representing a gain of some 40,000 since August, 1946. The significance of the seasonal industries is well illustrated by the Employment Service report that, in these same states, total employment has risen about 145,000 since the February seasonal low.

These figures may not be as optimistic as they appear on the surface. In spite of the overall gain, *employment in manufacturing plants is now actually below the August, 1946, level in these three states.* About 12,000 of the year-to-year loss has been in the food processing industry, while the non-seasonal factories have made up only part of the gain.

These non-seasonal manufacturing industries now employ between 15,000 and 20,000 fewer workers than at the postwar peak in March, 1947. As noted in earlier columns, the decline has been fairly general, with some noticeable effect upon non-ferrous metals, machinery, iron and steel products, rubber products, aircraft, ship conversion and textile products.

This trend throws some light upon the progress of the Western Slope's industrial development. *Although a substantial number of new and expanded plants have gone*

into production during the last year, it is now evident that, employment-wise, they have no more than compensated for declines in other factories.

It is difficult to estimate how far this trend might continue in view of such nation-wide unsettling factors as declining export markets, the slowing down of inventory accumulation, and the gradual decline in the physical volume of consumer buying. Current price rises in such fields as food and rents might also have an effect of diverting buying power from other consumer goods.

Aside from the food processing field, the significant increases recently have been in construction and trade and service activities. A strong tourist trade is influential in the latter fields while some improvement in the construction field seems to be resulting from either the removal of government restrictions or from the growing feeling that significant cost reductions are not imminent.

During the last three months, the three coast states report gains of 15,000 in construction employment and of 40,000 in trade and service. Employment in the mountain states is continuing at a high level under the influence of the seasonal tourist, construction, lumbering and agricultural industries. Worker surpluses are not significant.

As would be expected, total unemployment in the coastal states has been declining, the present estimate (from the Employment Service) of just over 400,000 being almost 40,000 below a year ago and

165,000 below the seasonal peak in February of this year.

Here the figures are not completely representative of the situation. A year ago, many unemployed were doubtful members of the labor force, and those who really needed and wanted jobs could find them with relatively little delay. The situation is reversed this year; the unemployed are anxiously seeking work with much less chance of finding it.

A major reason is the constant sifting process which each employer has engaged in since the labor supply became more adequate—dispensing with the more undesirable and unproductive workers as fast as more dependable applicants became available. The inevitable result is that *each month the remaining unemployed consist of a higher proportion of marginal workers who, in the present labor market, are likely to exhaust their insurance rights and then, after personal resources are exhausted, apply for relief.*

This is certainly a natural and even a desirable selection process, from the economic point of view, but we have not yet developed a satisfactory way of rehabilitating or providing for the individuals rejected by the process. Certainly unemployment insurance is not the complete answer in view of the temporary nature of its benefits for any one individual and of the fact that, for the marginal worker, unemployment is the usual situation and hence not a proper subject for insurance in the usual meaning of the term.

(Continued on page 27)

MANUFACTURING EMPLOYMENT

Estimated Number of Employees in Non-Agricultural Establishments—In Thousands—Source: U. S. Bureau of Labor Statistics

| | MONTANA | | IDAHO | | WYOMING | | COLORADO | | NEW MEXICO | | ARIZONA | | UTAH | | NEVADA | | TOTAL MTN. | |
|-----------------|---------|--------|--------|--------|---------|-------|----------|--------|------------|--------|---------|--------|--------|--------|--------|-------|------------|---------|
| | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 |
| January 1947... | 12,800 | 16,600 | 15,900 | 17,900 | 5,200 | 5,800 | 47,600 | 56,000 | 8,400 | 10,000 | 10,500 | 13,700 | 15,200 | 23,600 | 2,800 | 3,500 | 118,400 | 146,100 |
| February | 12,900 | 16,400 | 15,400 | 17,800 | 5,200 | 5,800 | 43,300 | 53,500 | 8,700 | 9,900 | 10,800 | 13,400 | 17,900 | 22,380 | 2,800 | 3,500 | 120,500 | 142,880 |
| March | 13,500 | 16,300 | 15,600 | 18,300 | 5,300 | 5,800 | 48,400 | 53,300 | 9,000 | 10,000 | 10,800 | 13,300 | 18,100 | 23,050 | 3,300 | 3,500 | 124,000 | 143,550 |
| April | 14,000 | 16,600 | 17,300 | ..... | 5,500 | ..... | 47,800 | ..... | 8,600 | ..... | 11,200 | 13,600 | 17,900 | 23,510 | 2,900 | 3,700 | ..... | ..... |
| May | 15,400 | 17,100 | 17,400 | ..... | 5,400 | ..... | 47,800 | ..... | 8,700 | ..... | 11,100 | 13,100 | 18,300 | 24,110 | 3,400 | ..... | ..... | ..... |
| June | 15,700 | 17,800 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 11,100 | 13,200 | ..... | 25,020 | ..... | ..... | ..... | ..... |
| July ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 12,000 | 12,700 | ..... | ..... | ..... | ..... | ..... | ..... |

| | WASHINGTON | | OREGON | | CALIFORNIA | | TOTAL PACIFIC | |
|----------------|------------|---------|---------|---------|------------|---------|---------------|---------|
| | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 |
| January | 168,200 | 162,200 | 108,000 | 118,100 | 622,600 | 696,900 | 898,800 | 975,200 |
| February | 162,600 | 162,600 | 106,000 | 115,200 | 602,500 | 693,700 | 871,100 | 971,500 |
| March | 155,400 | 159,700 | 106,900 | 114,400 | 611,400 | 691,600 | 873,700 | 965,700 |
| April | 161,000 | 160,900 | 107,000 | ..... | 651,400 | 698,600 | 861,000 | ..... |
| May | 163,300 | 164,900 | 111,800 | 117,100 | 655,300 | 691,600 | 858,000 | ..... |
| June | 170,200 | 170,800 | ..... | ..... | 665,200 | 688,200 | ..... | ..... |
| July ..... | ..... | ..... | ..... | ..... | 700,800 | 703,800 | ..... | ..... |

INSURED UNEMPLOYMENT

(Under all programs: figures in thousands. From Social Security Board)

| Week ending | Ariz. | Colo. | Idaho | Mont. | Nev. | N. Mex. | Utah | Wyo. | Total Mtn. | Calif. | Ore. | Wash. | Total Pacific |
|-------------|-------|-------|-------|-------|------|---------|------|------|------------|--------|------|-------|---------------|
| February 8 | 8.5 | 10.3 | 7.5 | 7.5 | 2.5 | 7.2 | 9.3 | 2.0 | 55.8 | 262.9 | 32.6 | 58.7 | 354.2 |
| March 8 | 8.8 | 11.2 | 7.1 | 8.4 | 2.6 | 7.4 | 7.8 | 2.2 | 55.5 | 264.3 | 28.2 | 57.2 | 349.7 |
| April 5 | 7.5 | 8.5 | 4.8 | 6.3 | 2.3 | 6.2 | 5.3 | 1.6 | 42.5 | 268.5 | 20.8 | 40.8 | 330.1 |
| May 3 | 6.9 | 7.1 | 3.1 | 3.5 | 2.0 | 4.4 | 3.7 | .9 | 31.6 | 251.9 | 16.3 | 33.9 | 302.1 |
| May 31 | 8.3 | 5.3 | 2.2 | 2.2 | 1.7 | 3.5 | 3.0 | .6 | 23.8 | 217.9 | 11.6 | 25.9 | 255.4 |
| June 6 | 5.2 | 5.4 | 2.1 | 2.1 | 1.6 | 3.7 | 2.7 | .6 | 23.4 | 226.0 | 11.5 | 25.7 | 263.2 |
| July 5 | 4.9 | 5.0 | 1.4 | 1.8 | 1.6 | 3.3 | 3.4 | .4 | 21.8 | 217.9 | 15.5 | 23.4 | 256.8 |

STANDARD ENGINEERS NOTEBOOK



White greases eliminate food-tainting danger

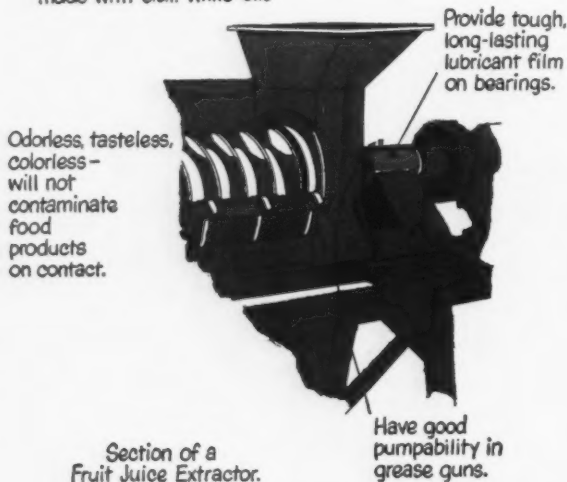
All types of food handling and processing machinery can be lubricated safely with Calol White Greases. They not only provide a tough wear-reducing film which resists operating temperatures and pressures, but will not taint or discolor food should they come in contact with it.

Calol White Greases are made with special white oils which are odorless, tasteless and colorless, and pass all tests and requirements of the U.S.P.

Calol White Greases come in a wide range of consistencies to meet the requirements of all processors. Grade designations are 1, 2, and 3. The lightest is fluid and may be used in sight-feed cups. All grades are suitable for application either by grease gun or compression cups.

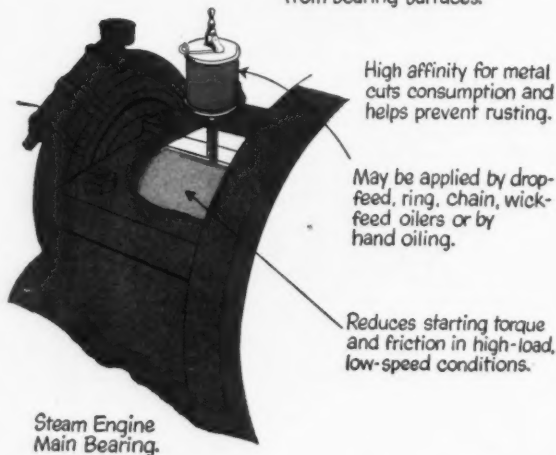
They are widely used to lubricate juice extractors, pumps, can closing machines, graders, pulpers, finishers, exhausters, preheaters, blanchers and others.

Calol White Greases are
made with U.S.P. white oils



Standard Fuel and Lubricant Engineers are always at your service. They'll gladly give you expert help—make your maintenance job easier. Call your local Standard Representative or write Standard of California, 225 Bush St., San Francisco 20; California

Calol Red Engine Oil X is compounded to resist high pressure and displacement from bearing surfaces.



New compounded Red Engine Oil cuts expense

To meet severe conditions encountered in the lubrication of external bearings of general industrial machinery, Calol Red Engine Oil X was recently developed and added to the Calol Red Engine Oil line. This new oil comes in three viscosity grades: 13X, 16X, and 26X.

Calol Red Engine Oil X is made from selected mineral oils to which are added special compounds. The high quality base oils and special additives give it outstanding ability to maintain a tough oil film on bearings in heavy-load high-temperature conditions. Compared to straight mineral oils, this cuts consumption, lowers starting torque and frictional resistance, gives more protection against rusting and promotes better circulation in ring-, and chain-oilers.

Calol Red Engine Oil X has a low pour test which allows easy application in a wide range of atmospheric temperatures.

Trademarks, "Calol," "RPM," Reg. U. S. Pat. Off.

FOR EVERY NEED A **STANDARD OF CALIFORNIA** JOB-PROVED PRODUCT

THE WESTERN OUTLOOK..News...Statistics...

2

EMPLOYMENT (Continued from page 25)

Incidentally, this selection process also explains why, at present, most of the reduction in unemployment claims load is through exhaustion of benefit rights rather than by placement in a new job.

Geographically, *West Coast unemployment is still more significant than in the nation as a whole.* Insured unemployment in the three states amounts to 5 1/2 per cent

of their civilian labor force as compared with just 3 per cent nationally. And it is still concentrated principally in the large coastal metropolitan areas, although even many of the agricultural areas now anticipate a surplus of workers during this year's harvest and food-packing peak.

A significant conclusion emerges from the persistence of significant unemployment in the urban areas; these areas, un-

like most parts of the country, have not achieved full employment even at the peak of one of the country's most frantic boom periods. It is obvious, then, that after the boom is past our unemployment problem can become serious unless industrialization proceeds much further than it has to date. A continuation and even intensification of community efforts and planning seems needed to insure that industrial growth.

Commerce and Banking

Because of its current high level, it is unlikely that industrial production will expand in the last half of this year as it did in the fall of 1946, reports the Federal Reserve Bank of San Francisco, and this situation, with the marked slowing down of inventory accumulation is likely to result in a smaller expansion in commercial and industrial loans.

Freight carloadings in Pacific Northwest territory for the first half of 1947 were the greatest since 1942, and about 13 per cent above the comparable period in 1946. Logs and forest products accounted mostly for the increase.

Chemicals

More plentiful lumber supply has resulted in good demand for chemicals for sapstain, and box makers say they will no longer patronize the small "pecker" mills unless they clean up their lumber.

Although the southern California synthetic rubber project is being pinched out by the government because it is considered a high-cost operation, several large chemical companies are studying the possibilities of the styrene unit which Dow has been operating for Uncle Sam. Among them are Dow, Monsanto, Union Carbide and Koppers. Monsanto's big loss of production capacity at Texas City has affected the national supply situation. Costs at the southern California styrene unit are not considered badly out of line, but necessity of dependence on

Southern California Gas Co. for butadiene supply has made it a big question mark.

Another chemical plant that may well be seized upon is the government's alcohol plant at Springfield, Oregon, which is about to shut down. It is reported to have good possibilities for other chemicals, even if the alcohol was too expensive.

Because of the short agricultural season this year, several producers of dormant oils for spraying will have to hold considerable supply in warehouses until next year, when it is expected they will cash in if the warehouse costs have not proved too heavy.

Canning and Packing

Mid-season guessing on the size of the California cling peach pack indicates that it will be about 10 per cent below the 17,285,000 cases of 1947. Demand has been surprisingly strong, in fact the whole canning picture has brightened considerably. Frozen foods are reported as having staged a remarkable come-back.

Oregon string beans of the Blue Lake variety have been heavily affected by white mold, cutting down some packers' estimated volume as much as 25 per cent.

California dried prune industry is embarking on a four-year promotion and advertising campaign of about \$100,000 a year. England's decision to stop American food imports may cut down the dried fruit market somewhat, but domestic demand on canned fruits is so strong that canners will not feel it.

California pack of cherries in brine for the 1947 season was 72,528 barrels or 9,066 tons, compared with a 1946 pack of 59,912 barrels or 7,489 tons, according to the Cannery League of California.

Spring and summer fishing on the Columbia River resulted in the largest catch since 1942. An estimated 15,000,000 pounds of Chinook salmon were received at canneries. Alaska salmon catch, although well above last year, is still not comparable to 1944. About 11 per cent of the Bristol Bay (Alaska) pack was sunk when the Alaska Steamship Company's motorship, Diamond Knot, was rammed off Port Angeles, Wash. The halibut catch dropped about 22 per cent below 1946, the decrease being attributed to the fishermen's strike during May and June. During August tuna prices rose to an all-time high of \$550 per ton at Astoria, Ore.

Sugar

Apparently the Rocky Mountain area is mostly responsible for the 40,000-ton increase in sugar beet production reported by the Department of Agriculture as of August 1 over the July 1 estimate. This would mean an increase of about 748,000 bags of refined sugar over and above the 17,284,000 bags estimated output for 1947 for this area reported in the September issue of *Western Industry*. Pacific Coast output estimates remain at 11,000,000 bags.

Cane sugar refineries have been extra busy in recent weeks shipping to customers they had protected against a price advance from \$8.25 to \$8.40 per cwt. The shadow of last year's strike in the Hawaiian Islands still hangs over the industry in the form of reduced yield resulting from lack of fertilizer and other care of plantations, but this is being offset to some extent by increased mechanization, both in the islands and on the mainland. This is expected to speed up the movement of sugar and level off some of the peaks.

WHOLESALESALES

In thousands of dollars. Percentage changes are from corresponding month of preceding year. From Bureau of the Census.

Mountain

| | Automotive Supplies | Change | Electrical Goods | Change | Furn. and house furn. | Change | Groc. and foodst. exc. farm prod. | Change | General Hardware | Change |
|----------|---------------------|--------|------------------|--------|-----------------------|--------|-----------------------------------|--------|------------------|--------|
| Jan. '47 | 876 | +45 | 1,616 | +22 | ... | ... | 3,086 | +30 | 1,038 | +39 |
| Feb. | 782 | +20 | 2,265 | +114 | ... | ... | 2,272 | +14 | 1,269 | +40 |
| Mar. | 860 | +35 | 2,577 | +125 | ... | ... | 3,862 | +10 | 1,934 | +65 |
| Apr. | 720 | +28 | 2,910 | +147 | ... | ... | 2,743 | +11 | 2,033 | +41 |
| May | 681 | +10 | 3,007 | +140 | ... | ... | 3,559 | +6 | 1,718 | +35 |
| June | 700 | +16 | 3,031 | +159 | ... | ... | 4,097 | +16 | 1,615 | +31 |
| Jan. '47 | 2,795 | +18 | 8,027 | +84 | 2,675 | +76 | 10,751 | +6 | 4,547 | +33 |
| Feb. | 3,005 | +23 | 9,029 | +121 | 1,652 | +33 | 10,050 | +4 | 4,238 | +44 |
| Mar. | 2,964 | +19 | 9,877 | +128 | 1,430 | +9 | 11,886 | +9 | 6,265 | +47 |
| Apr. | 3,193 | +18 | 10,077 | +149 | 1,635 | +1 | 11,775 | -5 | 6,955 | +36 |
| May | 2,930 | +9 | 12,158 | +109 | 2,640 | +53 | 10,425 | -3 | 6,114 | +22 |
| June | 2,580 | +5 | 11,055 | +108 | 1,221 | +127 | 12,036 | +19 | 7,097 | +6 |

Pacific

| | Industrial Supplies | Change | Lumber & bldg. mat. | Change | Mchy., equip. and supplies | Change | Metals | Change |
|----------|---------------------|--------|---------------------|--------|----------------------------|--------|--------|--------|
| Jan. '47 | 717 | +22 | 1,485 | +93 | 623 | +28 | ... | ... |
| Feb. | ... | ... | 750 | +60 | 674 | +57 | ... | ... |
| Mar. | 2,188 | +35 | 1,590 | +64 | 1,060 | +25 | 673 | +30 |
| Apr. | 1,995 | +30 | 1,604 | +46 | 994 | +15 | ... | ... |
| May | 249 | -3 | 1,223 | +6 | 729 | +27 | ... | ... |
| June | 390 | -12 | 1,206 | +45 | 828 | -7 | 600 | +1 |

FREIGHT

Cars of revenue freight, railroad carriers in 11 Western states.

(Compiled from Assn. of Am. R.R. weekly reports)

| | Carloadings | Received from Eastern Connections |
|----------|-------------|-----------------------------------|
| | 1946 | 1947 |
| January | 468,913 | 508,343 |
| February | 467,054 | 489,366 |
| March | 589,337 | 685,079 |
| April | 447,932 | 522,144 |
| May | 566,795 | 685,897 |
| June | 554,501 | 562,274 |
| July | 717,235 | 755,983 |
| August | ... | ... |

BANK DEPOSITS

(In millions of dollars—adjusted)

Daily average for month, all member banks in 12th Federal Res. Dist. Demand deposits excluding U. S. Gov't deposits, cash items in process of collection, and interbank deposits.

| | Demand Deposits | Time Deposits |
|--------------|-----------------|---------------|
| January 1947 | 8,802 | 5,789 |
| February | 8,513 | 5,807 |
| March | 8,277 | 5,863 |
| April | 8,196 | 5,854 |
| May | 8,239 | 5,861 |
| June | 8,292 | 5,885 |
| July | ... | 5,899 |

*Beginning next month, NET Demand Deposits will be listed.

BANK LOANS

Industrial, commercial and agricultural (In millions of dollars)

From weekly reporting member banks of Fed. Res. System in 7 Western cities: L.A., S.F., Portland, Seattle, Tacoma, Spokane, and Salt Lake.

| | (Average of Wednesday reports) |
|--------------|--------------------------------|
| January 1947 | 1,131 |
| February | 1,164 |
| March | 1,189 |
| April | 1,198 |
| May | 1,189 |
| June | 1,188 |
| July | 1,698 |
| August | 1,742 |

UNION PACIFIC
TREASURE MAP OF INDUSTRY



- ★ VAST SUPPLY OF COAL, IRON AND PETROLEUM
- ★ LEADING LIVESTOCK STATE
- ★ TREMENDOUS WOOL CLIP
- ★ IMPORTANT MARKETING CENTER OF POULTRY AND DAIRY PRODUCTS
- ★ LARGE PRODUCER OF SUGAR BEETS, POTATOES AND GRAINS
- ★ EXCELLENT TRANSPORTATION
- ★ OUTSTANDING SCENIC AND RECREATIONAL ATTRACTIONS
- ★ HEALTHFUL LIVING CONDITIONS

★ One of a series of advertisements based on industrial opportunities in the states served by the Union Pacific Railroad.

In Wyoming manufacturers will find a vast amount of raw materials. It is a leading state in potential mineral resources; produces great quantities of iron . . . has the world's largest untapped supply of coal. Copper, silver, gold, lignite and bentonite are among the mined metals and minerals. The State contains 27 oil fields and large timber lands.

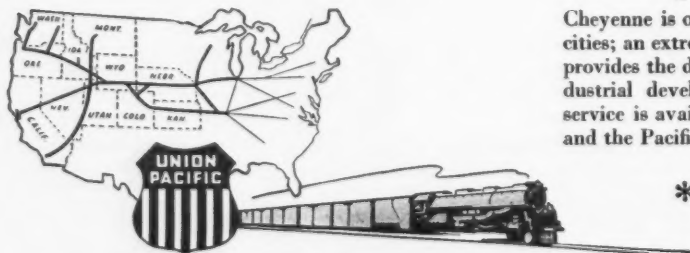
Wyoming is one of the greatest of livestock States, producing fine beef cattle. Its wool clip is tremendous. Poultry raising and dairying are important activities. Principal crops are sugar beets, potatoes and grains.

The healthful climate . . . scenic and recreational attractions such as Yellowstone-Grand Teton National Park and scores of dude ranches . . . a fine educational system . . . are incentives to living in this western region.

★ ★ ★ ★

Cheyenne is one of the principal Union Pacific mainline cities; an extremely important point to the railroad which provides the dependable transportation so essential to industrial development. For travelers, daily Streamliner service is available from Cheyenne to and from Chicago and the Pacific Coast.

★ Address Industrial Department, Union Pacific Railroad, Omaha 2, Nebraska, for information regarding industrial sites.



UNION PACIFIC RAILROAD
THE STRATEGIC MIDDLE ROUTE

Power and Fuels

Electric power loads in the West are running about 10 per cent above last year, and next year may add another 6 per cent, it is estimated. Supply, however, is falling behind demand, and the future may see greater cutbacks than the recent temporary curtailments in the Pittsburg area of California affecting Shell Chemical, Hercules Powder and Dow Chemical which resulted from sub-normal rainfall and low water levels in power plant reservoirs. These companies were on surplus power contracts.

So acute is the need for additional power in the Pacific Northwest that Bonneville Power Administration reports it could have signed up 600,000 additional kilowatts of firm power beyond the 335,000 kilowatts for which it recently signed firm one-year contracts with five private utilities.

Idaho Power Co. has postponed development of the 140,000-kw. hydroelectric plant on the Snake River near Huntington, Ore., in favor of a 100,000-kw. plant on the Snake near Bliss, Idaho. Suspension of plans for the former is due to a number of factors including political considerations in Oregon and plans of the Corps of Engineers for development of the middle Snake River. First contracts have been let for construction of a hydroelectric generating plant in southwestern Oregon by the California-Oregon Power Co.

Customary results have been reported from the west coast of the Olympic Peninsula in Washington where five Texas oil companies are drilling. With the drill down to 2,400 feet natural gas has been found at several levels, but no signs of oil have been discovered. The quantity of gas so far is insufficient to have any commercial value. High grade petroleum deposits are reported to have been found southeast of Point Barrow, Alaska, where the Navy has been conducting explorations for 3 years.

Continental Oil Co. announced plans for construction of an \$8,500,000 refinery at Billings, Mont., and at the same time Carter Oil Co. halted preliminary construction because estimated costs had risen from \$8 to \$16 million.

Reports from Prince Rupert, B. C., state that a representative of the Henry J. Kaiser interests has been surveying the Groundhop anthracite coal fields on the Skeena River with a view toward possible development of the deposits.

A car shortage is holding coal production down. Most Utah commercial mines were operating on a four-day week schedule in August because that is all the production that could be moved away from the mines. Personnel was available for a six-day week and demand continued well in excess of supply.

ELECTRIC ENERGY

(Production for Public Use—In thousands of kilowatt hours. Source: Federal Power Commission)

| | Mountain | | Pacific Northwest | | California | | Total Pacific | |
|------------|-----------|-----------|-------------------|-----------|------------|-----------|---------------|-----------|
| | 1945 | 1946 | 1945 | 1946 | 1945 | 1946 | 1945 | 1946 |
| Dec. | 878,095 | 1,002,170 | 1,020,513 | 1,413,478 | 1,026,147 | 1,490,316 | 2,046,660 | 2,903,794 |
| Jan. | 898,099 | 1,061,564 | 1,049,322 | 1,477,873 | 1,032,828 | 1,466,716 | 2,082,150 | 2,944,589 |
| Feb. | 948,496 | 962,756 | 968,484 | 1,328,994 | 1,096,306 | 1,301,334 | 2,064,790 | 2,830,328 |
| March | 976,658 | 1,041,287 | 1,036,585 | 1,454,305 | 1,333,305 | 1,531,005 | 2,369,890 | 2,985,310 |
| April | 893,992 | 1,012,461 | 982,232 | 1,352,340 | 1,374,077 | 1,597,737 | 2,358,309 | 2,950,077 |
| May | 976,801 | 1,068,190 | 989,436 | 1,346,351 | 1,467,259 | 1,674,755 | 2,456,695 | 3,021,106 |
| June | 1,085,393 | 1,263,666 | 1,075,075 | 1,363,534 | 1,540,325 | 1,759,504 | 2,615,400 | 3,123,038 |

PETROLEUM

(California, Oregon, Washington, Arizona, Nevada)
(From Bureau of Mines)

| | | CRUDE PRODUCTION (Barrels, daily avg.) | | GASOLINE | | GAS OIL & DIESEL | | HEAVY FUEL OIL | | ALL PRODUCTS | |
|----------------|------|---|------|----------|------|------------------|------|----------------|------|--------------|------|
| | | 1945 | 1946 | 1945 | 1946 | 1945 | 1946 | 1945 | 1946 | 1945 | 1946 |
| December | 1946 | 879,251 | 265 | 308 | 117 | 146 | 479 | 416 | 969 | 893 | |
| January | 1947 | 884,149 | 248 | 313 | 139 | 177 | 432 | 420 | 917 | 1,035 | |
| February | 1947 | 900,825 | 283 | 320 | 129 | 142 | 439 | 425 | 947 | 1,012 | |
| March | 1947 | 903,899 | 300 | 304 | 106 | 117 | 448 | 390 | 962 | 932 | |
| April | 1947 | 906,317 | 274 | 336 | 101 | 125 | 376 | 385 | 851 | 988 | |
| May | 1947 | 912,376 | 323 | 332 | 78 | 85 | 351 | 357 | 864 | 913 | |
| June | 1947 | 914,215 | 326 | 385 | 76 | 90 | 343 | 362 | 871 | 978 | |

BITUMINOUS COAL AND LIGNITE

(In thousands of tons. From Bureau of Mines)

| | (Colo.-N. Mexico) | | (Wyoming) | | (Utah) | | (Montana) | | (Wash.-Alaska) | |
|----------------|-------------------|------|-----------|------|--------|------|-----------|------|----------------|------|
| | 1945 | 1946 | 1945 | 1946 | 1945 | 1946 | 1945 | 1946 | 1945 | 1946 |
| January | 812 | 968 | 980 | 912 | 630 | 748 | 425 | 420 | 121 | 150 |
| February | 769 | 808 | 830 | 755 | 590 | 743 | 365 | 298 | 138 | 133 |
| March | 823 | 769 | 856 | 732 | 638 | 726 | 340 | 286 | 146 | 145 |

NATURAL GAS (CALIFORNIA)

(Compiled by Roy M. Bauer, gas supply supervisor, Southern California Gas Company)

| | —Number of Consumers— | | *Utilization (in thousands of cubic feet) | | | Net Receipts from Producers |
|----------------|----------------------------|------------|---|---------------------|------------------------|--------------------------------|
| | Domestic and Commercial | Industrial | Domestic and Commercial Sales | Industrial Sales | Electric Generation | |
| January | 2,230,922 | 5,732 | 28,380,594 | 7,381,909 | 1,188,067 | 40,264,071 |
| February | 2,241,606 | 5,695 | 25,608,969 | 8,048,789 | 2,090,694 | 32,750,623 |
| March | 2,250,870 | 5,691 | 19,840,856 | 9,172,740 | 1,924,870 | 32,201,562 |

*Utilization figures do not include company use, storage, and unaccounted for.

Steel

As a result of the steel industry's scrap committee report of more than 350,000 tons of scrap available at seven government depots in northern California, Chairman H. W. Christenson of Columbia Steel reports that the Army has promised real cooperation in getting this huge supply moved toward the melting furnaces, and has assigned a lieutenant-general to look after the job.

In due time the fall in scrap prices in the east is expected to reach the West Coast, but for the time being Western prices are up as a means of preventing eastern speculators and brokers cleaning out the Western scrap supply. Scrap prices on the Pacific Coast never did get

so completely out of balance with finished steel as they did in the east.

Steel pipe, wire products, sheets and small bars continue in very short supply, but the pressure is not so great on structurals, plates, wire rope and alloy steel. The greatest shortages are reported in the Seattle and Los Angeles areas, with things in better balance around San Francisco.

For manufacture of metal cans in the Pacific states and Hawaii for the second quarter of 1947, 133,418 tons of steel were consumed; in the mountain area 6,363 tons.

Non-Ferrous Metals

Effect of the presidential veto of the premium price legislation on non-ferrous metal production will not be fully reflected for several weeks. A few mines have closed and others are reviewing operating costs and readjusting operations. Prevailing opinion in the industry is that production will drop very little if any. Expectation is that manpower will be shifted from marginal to profitable mines.

Metalline Mining & Leasing Co., at Metalline Falls, Wash., has suspended production of zinc-lead ore, and attributed the suspension to the presidential veto of the premium price plan. Zinc-lead producers in the Coeur d'Alene area of northern Idaho have indicated that production will continue there.

Construction of a pilot plant for the extraction of zirconium from black sand will be completed at the Albany, Ore., laboratory of the Bureau of Mines. Through operation of the pilot plant it is hoped to reduce the cost of zirconium from \$500 to \$5 per pound.

IRON AND STEEL

Western Area of the United States
From American Iron and Steel Institute (in net tons)

| | Pigiron Output | Percent of Capacity | Steel Output | Percent of Capacity |
|----------------|-------------------|------------------------|-----------------|------------------------|
| February | 166,209 | 87.2 | 321,193 | 86.5 |
| March | 196,356 | 91.6 | 375,727 | 91.4 |
| April | 177,849 | 86.4 | 337,054 | 84.6 |
| May | 191,345 | 90.4 | 369,243 | 89.8 |
| June | 186,364 | 89.3 | 352,215 | 88.4 |
| July | 177,150 | 82.4 | 340,322 | 82.9 |

Alloy Steel

| | Output | Carbon Ingots, Hot Topped* |
|--------------------|--------|-------------------------------|
| January 1947 | 7,295 | 11,276 |
| February | 4,387 | 7,936 |
| March | 4,405 | 10,718 |
| April | 5,403 | 8,857 |
| May | 3,887 | 16,046 |
| June | 4,707 | 12,682 |
| July | 2,670 | 8,447 |


*Included in total steel.

COPPER

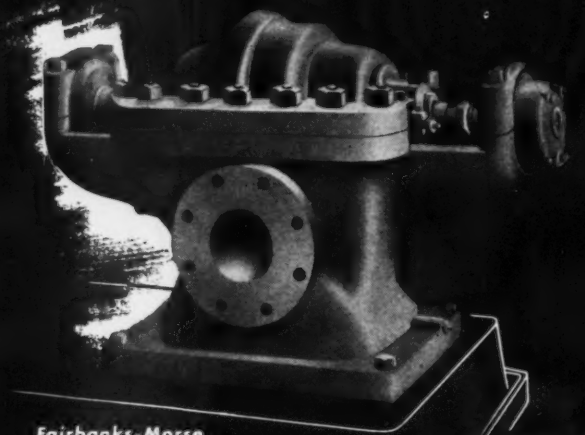
(Short tons. From U. S. Bureau of Mines)

| | ARIZONA | | UTAH | | MONTANA | | NEW MEXICO | | NEVADA | | TOTAL 11 WESTERN STATES | |
|----------------|---------|--------|--------|--------|---------|-------|------------|-------|--------|-------|----------------------------|--------|
| | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 |
| January | 25,300 | 30,700 | 11,000 | 22,550 | 6,050 | 5,350 | * | 4,614 | * | 3,800 | 52,046 | 67,383 |
| February | 24,300 | 29,450 | 500 | 21,800 | 5,400 | 5,050 | * | 4,732 | * | 4,000 | 38,822 | 65,383 |
| March | 22,300 | 32,000 | 650 | 24,250 | 5,300 | 5,550 | * | 4,840 | * | 4,100 | 38,075 | 71,112 |
| April | 16,400 | 30,200 | 500 | 23,500 | 5,300 | 5,200 | 4,287 | 5,471 | 4,800 | 4,050 | ..... | 68,853 |
| May | 16,350 | 31,000 | 500 | 25,000 | 4,800 | 4,800 | 3,906 | 5,368 | 4,350 | 4,600 | ..... | 71,180 |
| June | 15,800 | 30,000 | 400 | 26,000 | 4,700 | 4,760 | 3,993 | 5,400 | 4,675 | 3,000 | ..... | 69,160 |

*Included in total. †Preliminary figures.



**Fairbanks-Morse
Pomona Vertical Tur-
bine Pumps:** Oil or
water lubricated, with
open or closed impel-
lers—you can "figure"
the right one for you.



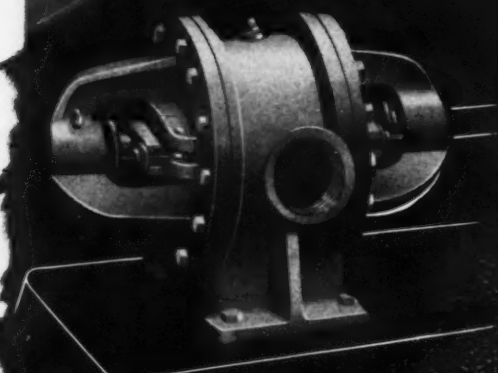
**Fairbanks-Morse
Centrifugals:** The
broadest line, for
widest variety of
centrifugal pumping
service.

How Do You "Figure" a Pump?...

"Figuring" a pump is engineer-talk for the slide-rule work necessary before deciding on the type and size of pump required to do the job at hand.

It's not easy: it involves the skilled use of almost every hydraulic formula. Equally important, it demands a familiarity with pumps and pumping problems that is broad enough to prevent oversight, deep enough to assure an answer that's right.

Before you "figure" your pumps, have a talk with your Fairbanks-Morse dealer or the pump engineer from your Fairbanks-Morse branch office. If there's a way for you to save money and gain real pumping satisfaction, they'll know how to "figure" it.



Westco Turbine Pumps:
Built with extreme accu-
racy for high-head pump-
ing of almost every liquid.

FAIRBANKS-MORSE

A name worth remembering

DIESEL LOCOMOTIVES • DIESEL ENGINES • PUMPS • SCALES • MOTORS • GENERATORS • STOKERS • RAILROAD MOTOR CARS and STANDPIPES • FARM EQUIPMENT • MAGNETOS

Lumber

Shortage of railroad cars in August closed a number of Oregon mills, variously estimated from 20 to 200. Although only smaller capacity mills were shut down completely, a few of the larger mills in the southern part of the state reported cuts in production. Shut downs began early in the month and continued into the last week; nearly all affected mills are served by the Southern Pacific. The crisis in transportation facilities resulted in a request for construction of a toll road from inland Douglas County to tide water at Coos Bay.

The first auction sale of timber in the Olympic national forest in Washington brought out only one bidder and the timber went at appraised prices. Two-thirds of the timber sales in Oregon and Washington during August failed to draw more than one bidder and timber went at appraised prices. One sale in the Snoqualmie national forest of Washington and another in the Siuslaw national forest of Oregon drew competition which doubled appraised prices. More than 300 million board feet were sold in the two states in August.

An Australian representative in Seattle stated that Australia needs to import 150 to 300 million board feet of timber annually from the Pacific Northwest but economic conditions are making such purchases difficult. A fire on the waterfront at Port Alberni on Vancouver Island in British Columbia destroyed 1.5 million board feet of lumber destined for delivery to England.

A survey of forest conservation in Washington and Oregon has disclosed that more than 19 million acres of logged timber land are now growing timber at average rates of 300 to 1,000 board feet per acre annually. It is estimated that the Douglas fir area can produce 7 billion board feet of lumber annually (this year's production rate) indefinitely.

LUMBER

(In thousands of board feet)

From West Coast Lumbermen's Association (Douglas Fir, Sitka Spruce, Port Orford Cedar, West Coast Hemlock, Western Red Cedar):

| Year through | 1945 | 1946 | 1947 |
|--------------|-----------|-----------|-----------|
| June | | | |
| Production | 3,657,496 | 3,115,439 | 3,431,037 |

From Western Pine Association figures (Idaho White Pine, Ponderosa, Sugar Pine and associated species):

| Year through | 1946 | 1947 |
|--------------|-----------|-----------|
| June | | |
| Production | 1,237,960 | 1,408,842 |

Pulp and Paper

Oral bids will be heard in Washington, D. C., on October 1 for the purchase of 8 billion board feet of pulp timber near Thomas Bay, Alaska. At least one firm is known to be definitely interested in establishing a mill at that location. The timber to be sold will operate a mill with a 525-ton daily newsprint capacity for 50 years. A total of about 80 billion board feet of pulp timber will ultimately be sold from the Tongass national forest.

Weyerhaeuser Timber Co. will build a \$6,000,000 sulphate mill at Springfield, Ore., next year. Operating entirely on slabs, edgings, and trimmings from the sawmill now under construction, and on undersized trees, chunks, and tops from the logging operation and the sulphate mill will produce about 150 tons of fibre shipping container board daily.

Plywood

Four quality improvements will result from the adoption on Sept. 15 of new U. S. Commercial Standard CS45-47 for Douglas fir plywood, the Douglas Fir Plywood Association announces. Principal improvement is in the use of adhesives formerly considered as premium for standard interior types of plywood. Inner plys for all grades have been assigned higher specifications, and grading simplified.

SOFT PLYWOOD

From Bureau of the Census

(In thousands of square feet)

| | 1945 | 1946 |
|----------|---------|---------|
| December | 75,100 | 121,816 |
| 1946 | | |
| January | 106,883 | 140,058 |
| February | | 129,622 |
| March | 109,005 | 139,779 |
| April | 120,152 | 148,027 |
| May | 128,489 | 141,752 |
| June | 121,412 | 139,623 |

Meat

Strong market continues, and meat packers are generally running to capacity. Big supply of cattle in feedlots, but concentrated in a few strong hands. Coast hides not moving too well, because of large supplies in eastern warehouses.

Flour

The government's plan to buy more domestic wheat and ship it abroad for processing, and buying less flour at home, has aroused some fear in the industry that by the end of the year domestic mills might find their operations considerably reduced. By the first of September the government had already purchased half of what was generally felt could be safely taken from the Pacific Northwest supply of wheat, which tends to some rather gloomy forecasting as to whether millers can get adequate supply for themselves. Quality of new crop wheat in the West is reported generally good, with the possible exception of some Montana wheat which had been shriveled by lack of moisture.

Building Materials

There has been some loosening of the supply situation in southern California on small pipe, but pipe is generally tight except for this, with the Pacific Northwest in even shorter condition than northern California. Tile production is steadily catching up on demand and ye ancient

WHEAT FLOUR

(In thousands of sacks; from Bureau of the Census)

| | Ore.-Wash. | Montana | Utah-Idaho | Colorado | California | Total |
|---------------|------------|---------|------------|----------|------------|-------|
| December 1946 | 1,865 | 357 | 515 | 444 | 396 | 3,883 |
| January | 2,033 | 345 | 532 | 481 | 452 | 3,402 |
| February | 1,865 | 329 | 506 | 455 | 409 | 3,364 |
| March | 1,794 | 397 | 539 | 495 | 463 | 3,688 |
| April | 1,694 | 360 | 526 | 448 | 420 | 3,448 |
| May | 1,701 | 362 | 484 | 467 | 362 | 3,376 |
| June | 1,721 | 342 | 488 | 432 | 409 | 3,392 |

CEMENT

(In thousands of bbls.; from U. S. Bureau of Mines)

| | California | Oregon - Wash. | Utah - Idaho | Mont. |
|-------|------------|----------------|--------------|-------|
| Dec. | 1,174 | 1,757 | 286 | 376 |
| 1946 | | | | |
| Jan. | 1,159 | 1,797 | 234 | 295 |
| Feb. | 1,355 | 1,613 | 250 | 296 |
| Mar. | 1,629 | 1,907 | 298 | 460 |
| April | 1,670 | 1,901 | 432 | 523 |
| May | 1,745 | 1,938 | 317 | 523 |
| June | 1,684 | 1,906 | 437 | 519 |

STRUCTURAL CLAY PRODUCTS

| | UNGLAZED BRICK (in thousands of standard brick) | UNGLAZED STRUCTURAL TILE (short tons) | VITRIFIED CLAY SEWER PIPE (short tons) |
|-------|---|---------------------------------------|--|
| Dec. | 9,546 | 13,875 | 1,423 |
| Jan. | 8,955 | 11,782 | 2,120 |
| Feb. | 9,334 | 14,038 | 1,853 |
| Mar. | 10,825 | 12,694 | 2,352 |
| April | 12,333 | 17,467 | 2,257 |
| May | 13,780 | 24,355 | 2,687 |

ASPHALT ROOFING

(Ariz., Calif., Idaho, Nev., Ore., Utah, Wash.)

| | ASPHALT ROOFING (Sales squares) | SATURATED FELTS (Tons of 2000 lbs.) |
|-------------|---------------------------------|-------------------------------------|
| December | 787,815 | 4,768 |
| January '47 | 759,807 | 4,695 |
| February | 727,533 | 4,271 |
| March | 761,481 | 5,426 |
| April | 793,719 | 4,832 |
| May | 811,578 | 4,799 |
| June | 797,995 | 5,444 |

art of door bell ringing seems likely to be revived in the not too distant future. Activity in building operations is sustaining the demand for building facings.

Cement mill operations on the West Coast were at the highest level since 1942, year of biggest wartime demand, during the first half of this year. California mills' output was 20 per cent higher than in the like 1946 period. In the Pacific Northwest the gain was 28 per cent.

Apparel

Koret of California have an optimistic view of the apparel industry. In spite of inflation—and in spite of the pessimistic predictions of economists—they report business is good in the industry. In fact it has been impossible to meet delivery dates, yet this has not resulted in cancellations. The delivery of piece goods from the east caused the delay in filling of orders on the West Coast, but buyers seem patient. Koret sees a bright future ahead for at least two years, buyers having rallied from the scare put into them by the gloomy economic observers, and the slump experienced in the apparel industry this summer being only the results of the temporary withdrawal of frightened buyers who were dubious of the future.

A shortage of approximately 500 workers exists in the San Francisco Bay area. Companies are working at the highest capacity permitted by the available labor supply.

APPAREL

(In thousands of dollars)

Total Women's, Misses' & Juniors' Outerwear

| | Los Angeles | San Francisco |
|-----------------------------|-------------|---------------|
| November | \$8,237 | \$2,070 |
| December | 6,565 | 1,811 |
| January, 1947 | 8,900 | 2,309 |
| February | 8,511 | 2,324 |
| March | 9,094 | 2,324 |
| April | 7,118 | 1,721 |
| Overall | | |
| Men's Work & Dress | | |
| Men's (thousands of dozens) | | |
| California | 21.0 | 96.3 |
| March, 1947 | 22.5 | 91.1 |
| April | 24.8 | 87.2 |
| May | | |

HOW TO GET Exact Mechanical Properties in Alloy Steel from Stock

Most steel buyers are accustomed to specifying alloys on the basis of analysis alone. But there's a better, surer way of buying that's gaining more followers daily—specification of Ryerson alloys by analysis *and* minimum hardenability requirement. Either one alone isn't enough. Together they give double assurance that your steel will measure up to performance demands.

You can order this way from Ryerson because we test every heat of annealed and as-rolled alloy in stock. Establish the heat treatment response for every shipment by end-quench hardenability tests. Then, when you specify the mechanical properties you must have after heat treating, we select bars that, on the basis of actual tests, will do the job.

This system of purchasing can effect important savings for your company. It pro-

fects against expensive product failure and practically eliminates the possible necessity of replacing unsuitable material. Ryerson assures delivery of alloy steel that will amply meet your minimum hardenability requirements.

And to prove that you can get the desired performance, we send a Ryerson Alloy Report with every shipment. Charted test results and mechanical properties interpreted from them confirm the steel's hardenability and guide you in obtaining the desired heat treatment results.

Hardenability is nothing new with Ryerson. It's been a Ryerson service for ten years now. If you have yet to order on this basis why not investigate the advantages? Thousands of tons of tested Ryerson alloys are awaiting your call.

JOSEPH T. RYERSON & SON, INC.

Plant: 4310 E. Bandini Blvd., Los Angeles, Calif. Mail Address: Box 3817, Los Angeles 54, Calif.
Other Plants: St. Louis, Milwaukee, Chicago, Buffalo, Pittsburgh, Cleveland, Cincinnati, Detroit, Philadelphia, Boston, New York

RYERSON STEEL

Spotlight

on the NEWS

WESTERN INDUSTRY
FOR OCTOBER, 1947

VOLUME XII

NUMBER 10



Plenty of Western industrialists who think they would like to see Henry J. take up residence in the Belgian Congo, begin to renege when asked whether they want the Fontana steel mill to fall into the hands of the Corp. or Bethlehem.

To be sure, his latest proposals are a bit disconcerting for the steel committee of the Western States Council, who pledged him full support toward getting the Fontana loan scaled down \$87 million, in order to put it on an equality with Geneva. Turned down by RFC on this, Kaiser now says it will be all right if RFC only knock off \$34½ million, which is what the Arthur G. McKee report says is the excessive war cost on Fontana.

But Kaiser also proposes nearly doubling Fontana's capacity, by adding four open hearths and a blast furnace, financing it by \$80 million first mortgage bonds to be sold to the public.

Who will buy the bonds? The manufacturers on the steel committee have not evinced much interest in financing Fontana themselves, and northern California capital is rather closely allied with existing steel interests, both national and local. Quite likely financial houses can scare up other prospects in southern California, but oh! for another Alden Roach, not already committed to going with U. S. Steel, and free to produce some real tonnage for Fontana or other independents!



Mountain Area Plans

Bits of progress are being reported in the industrial development campaign which is the basic theme for the Mountain States Association this year.

Montana has held a state-wide meeting at which plans for an inventory and cataloging of resources was arranged with university heads, and the University of New Mexico has established a division of

research to cooperate in economic studies. New Mexico is launching further plans at an October 3 meeting of chamber of commerce people in Albuquerque.

President J. P. Murphy of the Mountain States Association significantly points out that probably the greatest need in planning industrial development is to use foresight in regard to the water supply.



What Employees Think

That very enterprising canning company, Flotill Products, Inc., recently paid the entire cost of conducting a social-economic survey of opinion in Stockton, California. The analysis of the 400 interviews intended to give a good cross-section of which way the wind blows, as assembled by Russell Bjorn, Flotill's public relations director, includes the following:

Reasons why Stockton is a good place: (number of mentions) churches, religious opportunities, 90 per cent; security of the job, 78 per cent; opportunity for advancement in work, 56 per cent; feeling of "belonging," being of importance, 53 per cent; children's interests — Boy Scouts, Campfire Girls, etc., 53 per cent; opportunity for development of family, 50 per cent; social opportunities—clubs, associations—50 per cent.

In improvements desired, housing, recreational facilities, hospitals, libraries and playgrounds topped the list. But three persons out of every four who asked for improvements, did not request a lower tax rate, corroborating surveys elsewhere that people expect to pay for what they get.

Security of job led in the ratings for local industries, prestige in working for the company second, wages third, human treatment fourth. Apparently the big employers rate well with their employees, but evidently much remains to be done in properly interpreting employers' good deeds to both employees and community.



Electrical Demand

In the next eight years the sale of electric power on the Pacific Coast will increase 50 per cent, forecasts R. A. Neal, Coast vice-president for Westinghouse. In 1946 the total was 32 billion kilowatt hours, and by 1955 he estimates it will reach 42 billion, barring work stoppages.

Use of electric power already has exceeded war levels, and is steadily increasing, reports Mr. Neal, and the current rate of production for the Pacific Coast is 18 per cent higher than a year ago, compared with 14 per cent for the whole nation. He reports that less than 5 per cent of the Pacific Northwest's potential hydro-electric capacity of 65 million kilowatts has been developed at present.



Planes to Peanuts

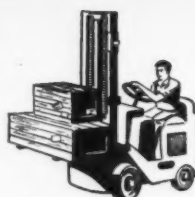
Just peanuts, that's all, says E. H. Jenanyan, former Planters' Peanuts sales executive, of the \$1,250,000 volume of business (50 carloads) done in the first year of his post-war venture. Known as Circus Foods, Inc., the concern packs peanuts in bags and cans, largely for export to Pacific countries. The plant, in San Francisco, was built in wartime to house the China Aircraft Co., an all-Chinese outfit making sub-assemblies for Douglas Aircraft.



Zero Is As Zero Does

If frozen foods would only stay frozen, packers' No. 1 headache would disappear. So the Pacific Northwest is proceeding to "ascertain by finding out" how to keep the stuff at zero temperature en route to market.

An eight-car special refrigerated train was dispatched from Seattle on a trial run to the East, using special units and the entire operation to be subject to close testing on temperatures, atmospheric pressures, outside climatic conditions, etc.



Stockton General Depot keeps fork trucks ON THE GO with the help of G-E battery-charging equipment

● Handling huge quantities of supplies quickly and easily is the main job of the Stockton General Depot, San Francisco, where a fleet of eight battery trucks bears the brunt of the load. Each truck works an eight-hour shift; then, on off-time, its 16 batteries are charged by a G-E *all-automatic* battery-charging unit, consisting of two 30-kw m-g sets and a battery-charging control cubicle.

Dependable Charging Service is Insured

All-automatic operation makes it possible for the battery man to service trucks quickly and efficiently. These features of G-E battery-charging equipment are designed-in to insure a complete charge and to promote long battery life:

1: Automatic charging and shut-down

- relieves operator of responsibility.
2. Protection from overload and from damage which could be caused by current reversal from battery to charging equipment.
3. Enclosed construction throughout for protection of operator and equipment.
4. Compact construction—permits location of the equipment where it can be used most conveniently.

G-E Has a Complete Line of Battery-charging Equipment

Whether you require single- or multiple-charging units, there's a G-E battery-charging unit ready to do the job. Ask your truck dealer or distributor for help in selecting the most suitable unit for your plant. Or call your nearest G-E office for complete details. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*



**AUTOMATIC
BATTERY CHARGING
EQUIPMENT**

GENERAL  ELECTRIC



It's a Radar Part

...but how to make it?

Assembly is illustrated full scale. Brass screws and nuts bolt the flanges; brass terminal fittings hold the shielded leads; and because the base metal is copper, the cadmium plating is on to stay.

To the Guyer Metal Products Corp., of Chicago, Ill., the answer was simple . . . or relatively so, considering the complexity of the housing and the close dimensional tolerances required.

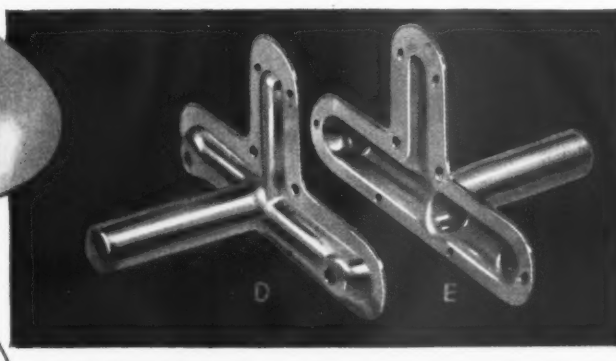
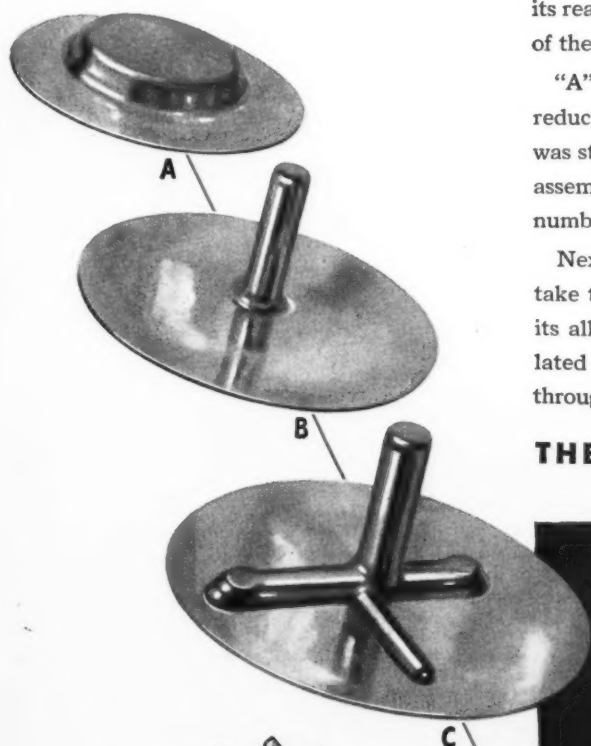
Anaconda Electrolytic Copper strip was used because of its ready adaptability to cold working and the accurate gage of the metal furnished.

"A" shows the first blank and draw operation. A series of reducing operations resulted in "B". Next, the body, "C" was stamped—and this part was used for *both* halves of the assembly, "D" and "E", with variations in the form and the number of perforations.

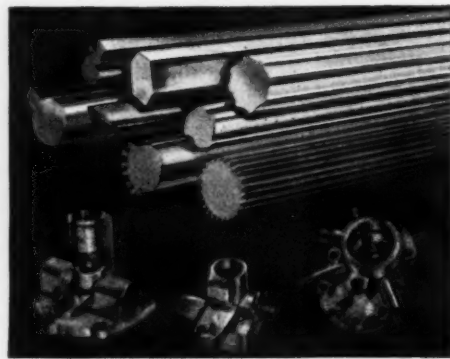
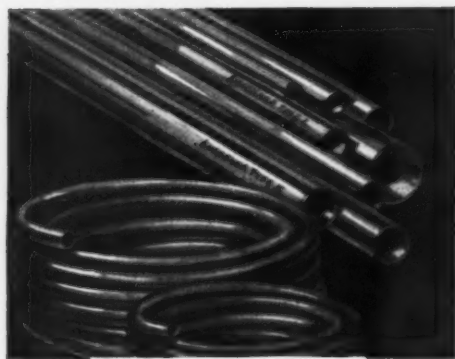
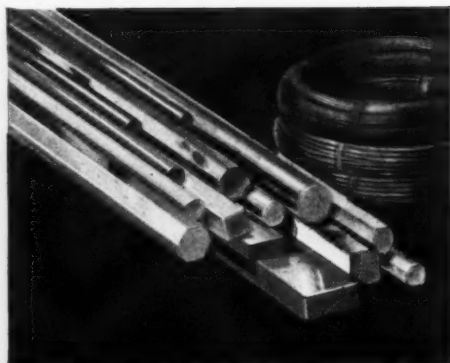
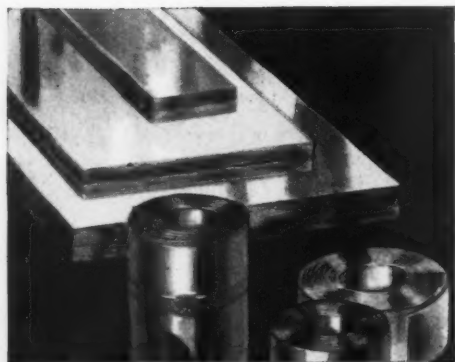
Next time you meet up with a problem in metal forming, take time out to consider; 1: the versatility of copper and its alloys, brass, bronze and nickel silver; 2: the accumulated wealth of metal-working experience available to you through our Technical Department.

THE AMERICAN BRASS COMPANY

General Offices: Waterbury 88, Connecticut



ANACONDA
COPPER AND BRASS



MOST VERSATILE **OF ALL COMMERCIAL METALS**

And today, through modern metallurgy, that age-old versatility of copper alloys is enhanced in several ways...by combining a number of desirable properties in a single alloy...by widening the choice of materials for ordinary and specialized uses...by assuring products that give unexcelled performance under a wide variety of service.



***Anaconda* COPPER and BRASS**



The American Brass Company produces Anaconda Copper and Copper Alloys in practically all commercial forms; also in special shapes and die pressed forgings. Whether your requirements are large or small, the personnel of Company Warehouses, District Offices and Anaconda Distributors will be glad to serve you. 47115

THE AMERICAN BRASS COMPANY

General Offices: Waterbury 88, Connecticut
Subsidiary of Anaconda Copper Mining Company
In Canada: Anaconda American Brass Ltd., New Toronto, Ont.



THE INDUSTRIALIZED WEST . . . Steadily forging to the front is the chemical industry, with soda ash one of the top products. From Searles Lake on the Mojave Desert in Southern California, West End Chemical Company lands expedited shipments 200 miles away in Los Angeles in a few hours by using all-steel trailers, loading by conveyors, dumping through hoppers.

An Incentive Plan that Hiked Wages 40%, Output 50%

EMployees of Vernon Kilns in Los Angeles are among the highest paid pottery workers in the country. The company is able to pay these wages and, at the same time, reduce direct labor costs through the use of an incentive plan based on time and motion studies.

Vernon Kilns manufacture a high quality line of semi-poreclain dinnerware, which through the years has built up a worldwide demand. The line commands a premium over domestic manufacture, its principal competition being English products. At present, about 60 per cent of the line is sold in eastern states and in export markets. The company also manufactures

a line of solid color California style pottery.

In the years immediately preceding the war and during the war the pottery was faced with the problem of meeting this increased demand for its products, while expansion of working facilities was being limited by wartime restrictions. Consulting engineers were brought in by management and an incentive plan was adopted as a partial solution to the need for increased production. The plan has been in operation 4½ years and has accomplished three valuable results:

1. Increased production.
2. Lower direct labor costs.

3. Increased earnings for the employees.

Management had to sell the plan to the employees first. They were able to do this by convincing them that once rates were definitely established and posted, there would be absolutely no reductions in standards, that under no conditions would a worker be paid less than his base rate as negotiated by union and company officials, that increased production per worker would not mean that personnel would be laid off, and finally that each day's production would be figured separately, thus removing the possibility of a worker being penalized on a good day's work for a poor production day. This successfully answered

(Continued on page 38)

Incentive Plan that Hikes Wages, Output

(Continued from page 37)

the objections which would have been raised against a straight piece work plan.

Vernon Kilns has a contract with the National Brotherhood of Operative Potters, an AFL affiliate. Officials of the union have objected to the plan in part, but where they were convinced that the employees in a department wanted the opportunity for increased earnings they have accepted the plan.

The first step in establishing a standard for an operation is to make motion studies for actual work in process. Working conditions and working areas are studied and revised, methods simplified and standardized. Operators are trained in the correct

procedure before being put on actual production.

Most of the jobs on incentive in the plant are individual operations and are paid on the basis of individual production. In certain operations, however, it is necessary to set up standards based on the operation of a crew and crew members are paid off on the production of the crew as a unit. Crew operations have complications which will be discussed later.

Making a Time Study

After the proper method has been determined and operators trained in that method, a time study is made. As an ex-

ample take an individual operation, such as a ware dresser. After a dish has been decorated a glaze is sprayed on and the plate is balanced on three pins, so that when the ware is going through the glost kiln during final firing, nothing is touching each plate except these three pins. The pins leave slight marks where the glaze has hardened at the point of contact between pin and plate.

It is the task of the ware dressers to knock this pin mark off with a chisel before the ware is shipped. Ware dressers are seated with piles of ware stacked on the floor to the right. The operator picks up from three to 12 dishes, depending on the size of the ware, and places them on her lap, face down. She then lifts each plate, one at a time with her left hand, knocks off the marks with her right, flips the dressed piece off the top and continues on through the stack.

After all plates have been dressed she stacks the ware in piles on the floor to her left. This operation was broken down to three elements — get, dress, and aside. "Get" is the reaching, grasping, and positioning of the plates on the lap; "dress" is the knocking off of the pins; and the "aside" is the transport, and stacking of the ware on the floor.

Each element was studied and recorded hundreds of times for each size of ware, all patterns and colors, and using different operators. The actual clocked time for the 6½-inch plate for one operator happened to be .024 of a minute for the get, .062 for dressing, .010 for the aside. Each operator is speed rated during the study.

It is obviously unfair to base standards on a study of a skilled operator and it would also be unwise to base the standards on the performance of an unskilled operator working at a speed below normal. A worker going along at an easy, steady gait, not pushing or extending herself, and using the accepted method of operation, and with a minimum of fumbles, is judged to be working at a 100 per cent pace. A worker extending herself and working at a speed above normal may be speed rated anywhere, as a rule, from 100 per cent to 160 per cent. The operator in the study under observation was working 10 per cent above normal for the get and aside elements, and 15 per cent above for the dressing.

Thus the actual time of .024, .062, and .010 are increased 10 per cent, 15 per cent and 10 per cent, respectively, to attain what is known as the normal times for each element of .026, .071, and .011 of a minute.

Determining Standard Time

The next step is to determine the final or standard time for the operation. To do this a fatigue or effort allowance is added to the normal times. It is acknowledged

| DRESSING DAILY PRODUCTION SHEET | | | | | | | | | | | | | | |
|--------------------------------------|-------------|------------|---------------|-------------|-------------|------------|-------------|------------|------------|--------------------------|--------------|---------------------------|-------------|--|
| NAME: <i>E. Jones</i> | | | | | | | | | | CLOCK #1: <i>413</i> | | DATE: <i>July 6, 1947</i> | | |
| STARTING TIME: <i>7:30</i> | | | | | | | | | | FINISH TIME: <i>4:00</i> | | ELAPSED TI: <i>8</i> | | |
| MELINDA WARE DECORATED AND COLORED | | | | | | | | | | | | | | |
| ITEM | PRODUCTION | | | | | | | | | | TOTAL | STAND. | | |
| Saucer | 4 | 36 | 7 | | | | | | | | 47 | 1.21 | | |
| 6 1/2" | | | | | | | | | | | | 1.21 | | |
| 7 1/2" | | | | | | | | | | | | 1.21 | | |
| 9" | 14 | 6 | 9 | 11 | | | | | | | 40 | 1.34 | | |
| 10 1/2" | | | | | | | | | | | | 1.34 | | |
| 12" Chop | 9 | 10 | 11 | | | | | | | | 30 | 1.78 | | |
| 1 1/2" Chop | | | | | | | | | | | | 2.02 | | |
| Fruit | | | | | | | | | | | | 1.27 | | |
| Chowder | | | | | | | | | | | | 1.45 | | |
| Coupe | | | | | | | | | | | | 1.37 | | |
| Rd. & Ov. Veg | | | | | | | | | | | | 1.48 | | |
| 1 1/2" Platter | 10 | 10 | | | | | | | | | 30 | 2.09 | | |
| A. D. Saucer | | | | | | | | | | | | 1.19 | | |
| MONTICITO WARE DECORATED AND COLORED | | | | | | | | | | | | | | |
| ITEM | PRODUCTION | | | | | | | | | | TOTAL | STAND. | | |
| Saucer | | | | | | | | | | | | 1.45 | | |
| 6 1/2" | 4 | 9 | 7 | | | | | | | | 20 | 1.57 | | |
| 7 1/2" | | | | | | | | | | | | 1.48 | | |
| 9" | 10 | 13 | 14 | 6 | 7 | | | | | | 50 | 1.58 | | |
| 10 1/2" | | | | | | | | | | | | 1.62 | | |
| 12" Chop | 6 | 14 | | | | | | | | | 30 | 1.95 | | |
| 1 1/2" Chop | 10 | | | | | | | | | | 10 | 2.23 | | |
| Fruit | | | | | | | | | | | | 1.45 | | |
| Chowder | | | | | | | | | | | | 1.63 | | |
| Coupe | | | | | | | | | | | | 1.57 | | |
| Rd. & Ov. Veg | | | | | | | | | | | | 1.66 | | |
| 1 1/2" Platter | | | | | | | | | | | | 2.27 | | |
| A. D. Saucer | | | | | | | | | | | | 1.37 | | |
| MONTICITO WARE DARK BLUE COLOR | | | | | | | | | | | | | | |
| ITEM | PRODUCTION | | | | | | | | | | TOTAL | STAND. | | |
| Saucer | | | | | | | | | | | | 1.73 | | |
| 6 1/2" | 16 | 4 | 20 | | | | | | | | 40 | 1.85 | | |
| 7 1/2" | | | | | | | | | | | | 1.75 | | |
| 9" | 10 | 13 | 7 | 10 | | | | | | | 40 | 1.86 | | |
| 10 1/2" | | | | | | | | | | | | 1.90 | | |
| 12" Chop | 10 | | | | | | | | | | 10 | 2.23 | | |
| 1 1/2" Chop | | | | | | | | | | | | 2.54 | | |
| Fruit | | | | | | | | | | | | 1.73 | | |
| Chowder | 10 | 10 | 10 | | | | | | | | 30 | 1.91 | | |
| Coupe | | | | | | | | | | | | 1.85 | | |
| Rd. & Ov. Veg | | | | | | | | | | | | 1.93 | | |
| 1 1/2" Platter | | | | | | | | | | | | 2.54 | | |
| A. D. Saucer | | | | | | | | | | | | 1.64 | | |
| WAITING TIME: <i>None</i> | | | | | | | | | | | | | | |
| MISC. | | | | | | | | | | | | | | |
| Total Hours | Sup'n Hours | Ind. Hours | Day Wk. Hours | Train Hours | ReWk. Hours | Wait Hours | Meas. Hours | StkIn Prod | NetUc Hour | All. U.Hr. | Mins. BaSt'd | Mins. allow | Bonus Mins. | |
| 8 | | | | | | | | 8 | 605 | 76 | | | 125 | |

by management that a worker is entitled to a certain rest period and that a worker will be more productive during her fresh periods than she will late in the day. To compensate for this factor, another percentage is added to the normal time already set up. This percentage is determined by the nature of the work, the amount of lifting, and straining necessary; the weight of the material handled; working conditions; and the difficulty of the position in which the operation has to be performed.

In the case of the ware dresser, the weight of the materials handled was light, working conditions good, the position a little above average in difficulty. The get and aside elements were given a fatigue allowance of 18 per cent and the dressing, 16 per cent.

Thus the normal times are increased by these percentages to $.026 \times 118$ per cent or .031; $.071 \times 116$ per cent or .082; $.011 \times 118$ per cent or .013. The final standard time for dressing a $6\frac{1}{2}$ -inch plate is $.031 + .082 + .013$ for a total of .126 and for a dozen the standard would be 1.51 minutes. Since the operator's actual clocked time for dressing a plate was .096 she was earning a bonus of about 31 per cent ($.126 \div .096$).

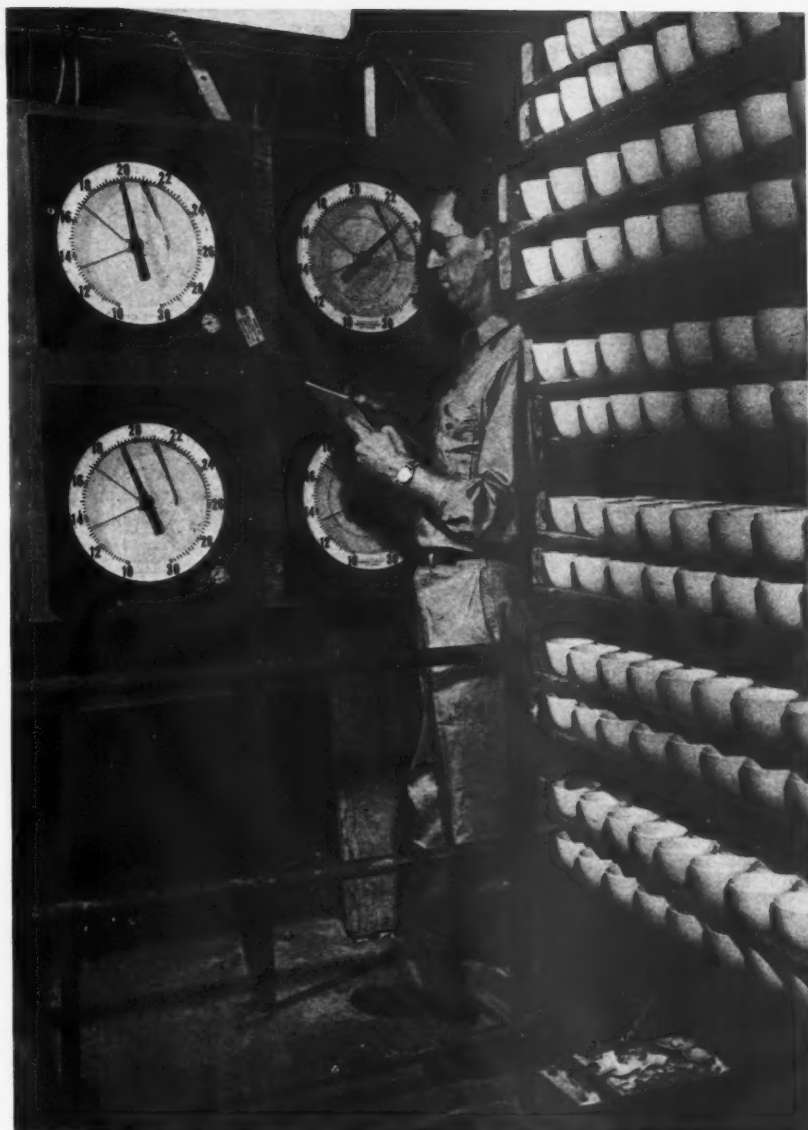
After standard times for all studies have been calculated the results are examined and compared. Times should be fairly close, regardless of the number of operators studied because of the speed rating. Times that are out of line are rechecked and the operators studied again to ascertain the reason for the discrepancies.

Standard Time For a Crew Operation

Standard time for a crew operation is achieved in much the same way. For example, in applying glaze to a dish after it has been decorated requires the use of a crew of 11 people, each performing a different function. Each position in the crew is studied exactly as was the ware dresser and standards established for each position. It is apparent that in an operation requiring the use of 11 people each performing a different operation that certain operations will require more skill, effort, and time than will other operations. Skill and effort are compensated for by differences in base rates.

Due to the fact that all operations will differ in length of time needed for performance certain crew members will have to wait varying lengths of time. It would be unfair to penalize the crew for waiting time beyond their control, so an allowance is added to the standard to compensate for this waiting time.

In brief, all positions are based on the bottleneck or key job, that job which requires the longest time to complete. The difference between the standard time for the bottleneck job and the standard times



Courtesy Brown Instrument Co.

* Results of the incentive plan have shown that both management and employees have been winners. Above, Foreman Webb takes a pyrometer reading from instrument panel.

for the other positions is handled as an allowance and is added to the standard time. For control purposes this allowance is handled separately and is recorded as waiting or idle time.

Workers Turn in Production Tickets

To determine a worker's earnings, each employee turns in to the standards office a production ticket noting the dozens of ware handled. The standards office then calculates the standard minutes per dozen. An employee, to earn his best rate, is expected to produce 480 standard minutes for an eight-hour day (8×60). If a worker produces more than 480 standard minutes the company feels that he is entitled to increased earnings and is paid accord-

ingly. In the case of a ware dresser, if she dressed 370 dozen $6\frac{1}{2}$ -inch plates she would have produced 559 standard minutes (370×1.51). Say her base rate was \$.90 an hour, or \$.015 per minute, she would be paid $559 \times .015$ or \$8.39 instead of 8×90 or \$7.20, an increase of 15c an hour.

Workers are paid only for quality work. Work performed improperly must be reworked at no extra cost to the company.

The results of this incentive plan have shown that both management and employees have been the winners. Management can look back to an increase of 50 per cent in production and the worker to his increase in pay of 40 per cent with a mutual feeling of satisfaction.

How Careful Hiring Cancels Expensive Labor Turnover

By ROBERT N. McMURRY

Dr. McMurry has had his own consulting service, Robert N. McMurry & Co., in the fields of personnel, industrial relations, and market research since 1943 and previous to that was in charge of the Chicago office of the Psychological Corp. for eight years, engaged in the same type of work. He is an authority on selection techniques, having been one of the pioneers in developing patterned interview procedures. He is a member of numerous scientific societies and is the author of "Handling Personality Adjustment in Industry," Harper & Brothers, 1944.



AT NO time since before the war has the West Coast area offered as good opportunities for careful employee selection as exist today. As indicated by the figures shown herewith the population has increased appreciably.

On the other hand, as reported by the U. S. Employment Service, the decline of war industries, the re-entrance of many women into the labor market and losses in the textile and apparel trades, in machinery, in automotive trades, in transportation and in utilities has had the effect of easing the labor situation.

In practically every labor market area on the West Coast there is a surplus of labor today. No longer is it necessary to hire anyone who would take the job. For the first time in six years the employer can begin to be *discriminating*.

Careful hiring is the first step toward building an organization which will be composed of people who are stable, productive, satisfied.

Through discriminating hiring, it becomes possible to exclude at the outset many potential "problem employees," particularly the stupid, the unstable, the irresponsible, the lazy, the insubordinate and the chronically dissatisfied. Furthermore, discriminating hiring permits more careful placement; there is less danger of putting a qualified candidate on a job which requires too much or too little of him or in work which is temperamentally unsatisfying in which he will be a "square peg in a round hole."

Careful selection is not a "frill," an impractical, academic, source of additional expense. On the contrary, it is vital to

every company which expects to hold its own in postwar competition. Labor costs alone account for from 15 to 70 per cent of the sales dollar with many commodities and services.

High turnover by itself can be very expensive. It is not always recognized by management that when an employee leaves, the company's investment in him is *totally lost*. Yet when allowance is made for the cost of recruiting, hiring and placing the employee; of providing necessary training for him; of supervising him on the job and of paying him at least minimum rates and absorbing the cost of his spoilage and mistakes while he is learning, it is not unusual to discover that this investment ranges from \$250 for a factory hand to \$10,000 or more for an executive.

A middle western company employing 6,000 persons through its ability this year

More People, More Problems

The Census Bureau's estimates of total population as of July 1, 1946, with percentage changes from 1940 and 1945 follow (figures exclude armed forces overseas).

| | Population in Thousands*) | % Change— 1940-46 | % Change— 1945-46 |
|---------------------|---------------------------------|----------------------|----------------------|
| United States | 139,893 | + 6.2 | + 6.0 |
| New York | 13,742 | + 1.9 | + 7.2 |
| Pennsylvania | 10,024 | + 1.2 | + 7.8 |
| Mountain | 4,275 | + 3.0 | + 3.7 |
| Montana | 478 | + 14.5 | + 5.8 |
| Idaho | 472 | + 10.0 | + 3.5 |
| Wyoming | 263 | + 4.8 | + 5.6 |
| Colorado | 1,138 | + 1.3 | + 5.8 |
| New Mexico | 529 | + 0.5 | + .9 |
| Arizona | 623 | + 24.7 | + 7.0 |
| Utah | 637 | + 15.7 | + 6.0 |
| Nevada | 135 | + 22.8 | + 4.9 |
| Pacific | 13,257 | + 36.2 | + 5.4 |
| Washington | 2,254 | + 29.8 | + 4.2 |
| Oregon | 1,453 | + 33.3 | + 10.4 |
| California | 9,551 | + 38.3 | + 4.9 |

*States may not add to regional totals, due to rounding.

to reduce its turnover by 60 per cent was able to effect an estimated direct saving of \$1,400,000—precisely the amount of its extra dividend. Such economies can easily make the difference between profit and loss in an operation.

The need for better control of personnel costs—today about the only item which can be appreciably reduced—daily becomes more critical. Everywhere markets are becoming more competitive. In some lines, already there has been a sharp trend toward a buyers' market. Furthermore, as many items which were in short supply become more plentiful, competition for the customer's dollar is rapidly becoming

keener. This latter condition is accentuated by the fact that rising prices on essential items mean that many persons have less to spend on other products.

Many of those in management are not aware that sound employee selection is *not necessarily complicated nor expensive*. In reality, excellent results can be obtained through the use of simple, common sense procedures. If desired, extensive research can be undertaken to better selection methods. However, simply through the use of certain simple, basic principles appreciable improvements can be made in the effectiveness of selection and placement.

A good minimum selection program has five elements:

1. *Preliminary screening standards* for appearance, manner, age, physical handicaps, etc., designed to eliminate the clearly unfit at the very outset, thus saving the time of both applicant and employer.

2. *The comprehensive application form* designed to permit judgments relative to the applicant's job stability, experience, training and general home background. This form also carries statements which can be verified by previous employers.

3. *Tests of intelligence, interests and aptitudes* to aid in the placement of the applicant (e.g., a high level of intelligence is a handicap on a routine job) and to determine his capacity to benefit from training.

4. *The telephone check with previous employers and schools* to verify the applicant's statements on the application form and to obtain other relevant information about him.

5. *The standardized interview* to provide a complete review of the applicant's work record, schooling, early home environment, financial and domestic status and health.

By means of these procedures it becomes possible to evaluate the *two distinct sets of qualities* which determine vocational success, whether the job be that of janitor or company president. These qualities are: (1) the applicant's *equipment*, i.e., his intelligence, his skills, his experience, his interests and his aptitudes; the factors which determine what he *can* do, and (2) his *character and habits*, i.e., the extent to which he is stable, industrious, able to get along with others, loyal, self-reliant, a leader, emotionally mature and well motivated; the factors which determine what he *will* do.

In practice the candidate's *equipment* is measured by *tests*; his *character and habits* by the *standardized interview*. Character and habit traits are judged in the interview very simply: it is merely assumed that the best basis for predicting what the individual will do if hired is to *ascertain what he has already done on previous jobs and in school*. It has been found again and again that character traits and habits, once well-established in childhood and youth, subsequently undergo little radical change. Hence, they permit surprisingly reliable predictions of both job stability and job success.

Typical of the predictions of both stability and job success which these procedures permit are the findings of the research study conducted by the Link-Belt Ordnance Co.¹ Here all interviews were conducted by members of the company employment department. One and one-half years after their initial employment, an analysis was first made of the relation between the interviewers' classification of those hired and the length of service of the 587 who had left the company (this group was chosen because length of service could be accurately determined). These findings are shown in Table I.

Following this, a similar analysis was made of the relationship between interviewers' initial judgments and foremen's ratings (made without knowledge of the interviewers' judgments) on 407 persons who were still on the job at the time the study was made. These findings appear in Table II.

The most convincing evidence of the contribution of good selection to operating economies and other benefits is found in the experience of a middle western manufacturing company employing approximately 500 in the office and plant. Prior to the introduction of improved selection procedures, turnover in the plant was running as high as 18 per cent per month, 223 men were required to get out production and turnover among office employees was averaging 6 to 8 per cent per month.

Six months later, in an identical labor market, after a selection and placement program of the type here described had been introduced and was in use by the regular company personnel staff, a radical improvement could be noted. Turnover in the factory had dropped to an average of 3 per cent per month, and 178 men were turning out 20 per cent more production than the original 223, due to the replacement of unsatisfactory men. In the office, turnover had fallen to less than 2 per cent per month.

It is estimated conservatively that the savings due to reduction in turnover alone

¹Development of Instruments for Selecting and Placing Factory Employees. Robert McMurry and Dale Johnson, *Advanced Management*, pp. 113-120, Vol. X, No. 3, Sept. '45.

TABLE I
COMPARISON OF INTERVIEW RATINGS WITH LENGTH OF SERVICE
(Employees who left before May 1, 1944)

| Length of Service | INTERVIEWERS' RATINGS | | |
|----------------------------|-----------------------|-----------------|----------------|
| | 1 | 2 or 3 | 4 |
| 1 year and over | 33 (45.8%) | 128 (28.9%) | 3 (4.3%) |
| 6 months to 1 year | 20 (27.8%) | 129 (29.0%) | 4 (5.7%) |
| 3 months to 6 months | 8 (11.1%) | 65 (14.6%) | 7 (10.0%) |
| 2 months to 3 months | 6 (8.3%) | 45 (10.1%) | 7 (10.0%) |
| 1 month to 2 months | 4 (5.6%) | 38 (8.5%) | 7 (10.0%) |
| 1 week to 1 month | 1 (1.4%) | 26 (5.7%) | 14 (20.0%) |
| Less than one week | 0 (0.0%) | 14 (3.2%) | 28 (40.0%) |
| Total | 72 (100.0%) | 445 (100.0%) | 70 (100.0%) |

The Pearson coefficient of correlation in Table I is $.43 \pm .02$.

TABLE II
COMPARISON OF INITIAL INTERVIEW SCORE WITH SUCCESS RATING
(Men and Women Combined)

| | INTERVIEWERS' RATINGS | | | |
|-------------------|-----------------------|---------------|----------------|---------------|
| | 1 | 2 | 3 | 4 |
| Outstanding | 6 (35.3%) | 8 (47.1%) | 3 (17.6%) | |
| Above Average ... | 2 (1.2%) | 88 (53.0%) | 75 (45.2%) | 1 (.6%) |
| Below Average ... | | 13 (6.6%) | 175 (88.8%) | 8 (4.6%) |
| Very Poor | | | 4 (14.8%) | 23 (85.2%) |

In Table II, as may be seen, the relationship is unusually close. The Pearson coefficient of correlation is $.68 \pm .02$.

amount to \$32,000 annually. In addition, the savings induced by the 20 per cent increase in production in spite of the elimination of 45 men from the work force are estimated to amount to \$176,000, making a grand total, exclusive of intangibles, of \$208,000 annually.

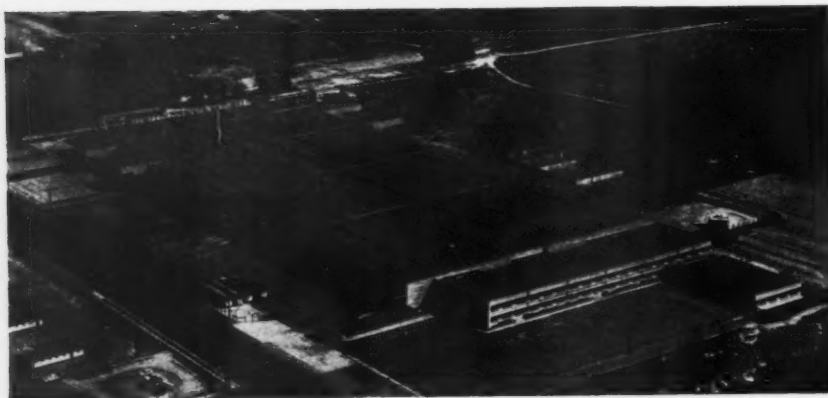
An important by-product, due in part to improved selection and in part to other procedures, was a marked improvement in general employee morale. This manifested itself tangibly in the employees' attitudes toward union organization. In spite of vigorous campaigning to organize these plant employees, so little response was received by the union that it did not even petition the NLRB for an election. As a result, this and one other company are the only organizations of their size in a town of 40,000 which have not been unionized. Furthermore, for the present, at least, the unions have given up their attempts to organize this company's employees.

These remarks clearly indicate that important savings can be made through the

introduction of sound selection procedures. If West Coast enterprises are to meet competition successfully and develop their markets fully, they must take advantage of every possible cost saving. Every technological improvement must be used. However, most employers tend to think of technological improvements solely in terms of mechanical devices.

Certainly such devices often make important contributions. Nevertheless, this point of view overlooks one important condition, the human factor. It is well stated by Peter F. Drucker as follows:² "Most of us—including a good many people in industrial production itself—fail to understand that modern production, and especially modern mass production, is not based on raw materials or gadgets, but on principles of organization—organization not of machines, but of human beings, i.e., of social organization."

²Peter F. Drucker, "The Concept of the Corporation," John Day & Co., New York, 1946, p. 21.



• An air view of the new Nash-Kelvinator assembly plant at El Segundo, California.

Tips For Prospective Auto Parts Suppliers

NASH-KELVINATOR is definitely interested in the growth of companies on the West Coast which could supply parts and components to it and other manufacturers assembling there. These prospective suppliers, however, must be willing to adopt those methods and techniques incidental to mass production which are responsible for the results achieved by the automotive industry since it began.

Previous articles in this series have capably explored the vast potentialities available to West Coast manufacturers who may be considering the manufacture of automotive parts. A recent article (the fourth) described in considerable detail the techniques and methods that must be applied for the success of the individual vendor who wishes to join one or more of the industry's mass production teams.

An important factor which has been touched upon in preceding articles is the philosophy that always has been part and parcel of automotive mass production. This attitude calls for acceptance of the fact that the automobile manufacturers expect—in fact, insist—that their suppliers produce at a competitive cost on current schedules and do it with a safe margin of profit after they have reached an estimated break-even point in quantity.

Provided West Coast manufacturers do apply the attitude, the methods and the techniques, we are confident of their progress because such items as tires and cushion springs have been successfully produced on the West Coast for many years.

Certainly the existence in the midwest of hundreds of successful parts suppliers testifies to the fundamental soundness of suppliers planning ahead on the basis of the automotive manufacturers' estimate of annual output. Unquestionably an element

By A. M. WIBEL
Vice-President in Charge of Purchasing
Nash-Kelvinator Corporation



of risk is involved in creating new sources in a field which heretofore has been largely a midwest interest. Any business today is a risk, but the opportunities now open to fast growing Coast states manufacturers justify a risk.

The prospective West Coast manufacturing supplier appears to have three choices open to him

1. He can contract for the kind and volume of business to profit at once on a product for West Coast automotive assembly plants of one or more companies.

2. He can accept business which in the beginning may not be profitable, and gamble on obtaining enough additional business later, anticipating the volume necessary to compete profitably with present midwest manufacturers.

3. Provided he produces profitably in sufficient volume, he can compete for business in the midwest as well as on the West Coast.

It is apparent that the prospective West Coast automotive supplier, along with some disadvantages, also has many pro-

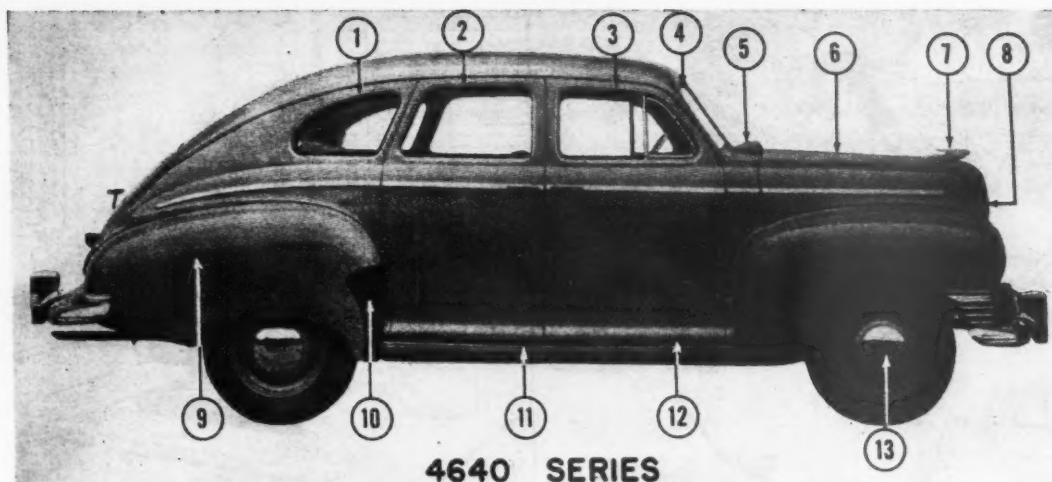
duction and delivery cost advantages. It may be that some of these advantages temporarily do not exist due to postwar scarcity of materials, housing and the like. But for long-term planning, the West Coast manufacturer is likely to be in a good position with the following factors weighting the scales in his favor: A very mild climate which, compared with the midwest, results in lowering of costs of industrial and residential construction, heating, lighting, etc. Also, his strategic location as a supplier reduces hauling distances and freight costs on parts intended for assembly on the West Coast.

With these and other advantages, the West Coast manufacturer should be in a position to compete successfully for automotive assembly plant business there with less volume than that required by the midwest manufacturer.

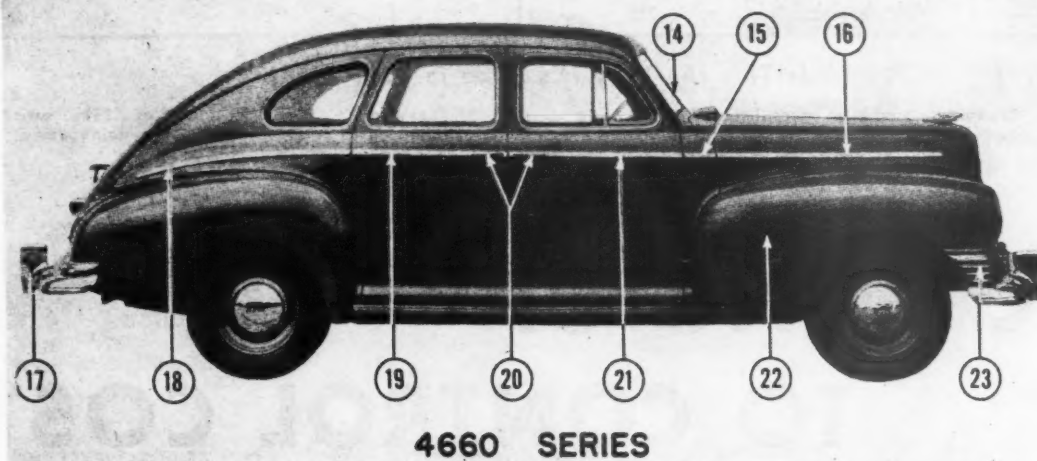
The application of mass production methods is the only logical solution to the future manufacture of automobile parts and components on the West Coast. This has been definitely proven again during World War II. Without it, there is little hope of competing in peacetime with midwest producers who over the years have perfected equipment and know-how to such an extent that costs have brought them large orders for similar parts from not just one, but several, manufacturers.

It should be borne in mind that in classifying car parts they must be divided into manufacturing classes. Such divisions would necessarily be a prime consideration in the analyzing of the potentialities of any manufacturing project. In a general sort of way, these classes might be listed as:

1. Parts needing expensive tooling such as fenders, hoods, body panels and bumpers. Such parts cannot economically be produced with more than one set of such dies



4640 SERIES



4660 SERIES

• Although the Nash unitized body is factory-made, much in the way of trim and other features could be supplied by Pacific Coast manufacturers. Except for 5, cowl vent, hood assembly, practically all of the parts listed above fall in this classification. They are: 1, rear quarter reveal moulding; 2, rear door reveal moulding; 3, front door reveal moulding; 4, windshield reveal moulding; 6, hood top center strip; 7, hood top ornament; 8, hood front name plate; 9, rear fender; 10, rear fender splash guard; 11, running board apron trim moulding; 12, running board apron trim (rubber); 13, wheel hub cap; 14, windshield center shell; 15, cowl side body belt moulding; 16, hood side moulding; 17, bumper vertical bar; 18, rear quarter body belt moulding; 19, rear door body belt moulding; 20, outside door handle; 21, front door body belt moulding; 22, front fender; 23, front fender grille.

and tools due to the high cost of these facilities and it follows that this single set of dies and tools would be located as near as possible to the largest retail sale market.

2. Parts that require facilities and equipment capable of producing similar items for several competing automotive companies. These parts would include such things as cushions, gaskets, screws, bolts, simple stampings and other items.

3. Parts or supplies that are common to many manufacturers; for examples, such things as tires, bearings, hardware, window regulators, electrical and other wire and similar parts.

The West Coast manufacturer, of course, also must use care in the selection of parts which will lend themselves to his facilities and techniques for production on the Coast. For instance, to produce large stampings, an extremely high die and tool cost, as well as large capital outlay would be required. Nash, for example, has in-

vested many millions of dollars in dies and tools to produce doors, body sides, roof panels, deck lids and cowl sections at its body plant in Milwaukee. Its underbody sections are produced in Detroit by Budd Manufacturing Company which also has large die and tool investments.

The Nash "600," unlike any other car in the industry, has an all-welded, unitized body and frame construction. Neither Nash, producing five large body parts, nor Budd, producing one large body part, could manufacture these large components as economically on the West Coast without the much larger volume required to operate their midwest plants.

I believe West Coast industries for the next few years should produce items which lend themselves to profitable production on a smaller scale, such as trim materials, storm strips, belt moldings, garnish moldings, cushion springs, window regulators, window channels, brakes, propeller shafts, exhaust pipes and mufflers, batteries, body

and chassis paint, lights, molded rubber, tool kits, jack and tires.

Nash Motors, which next year plans to enter West Coast production for the first time, necessarily will produce here only that territory's quota of cars. Such limited production would not prohibit a West Coast manufacturer from producing for Nash because other car manufacturers on the Coast would, of course, be interested in like items.

Nash is interested in finding sources on the West Coast for various parts to be shipped to its El Segundo plant when placed in operation; that is, if the new sources can make regularly scheduled deliveries and can meet delivered costs quoted by present suppliers.

Certainly it would appear that the future is exceedingly bright for automotive industrialization of the West Coast and within the limits of its abilities, Nash-Kelvinator Corporation can be counted upon to lend its most enthusiastic support.



Is This the Way It's Done in Your Plant?

"Probably a couple of hours. I think that's pretty close to what it was last time."

"Let's see . . . 2 hours \times factor of 3.251 = exact labor cost. Good! The costs are going down!"

"TOOLING UP" TO CONTROL COSTS

IV.

CONTROLS, to be effective, must conform with these three simple yet all-important requirements:

1. They must be adequate in objective.
2. They must be accurate in presentation.
3. They must be current.

The above statement is so very obvious that the reader may wonder why a writer would even take the time to present it. Yet this entire article is being written to underscore the statement, because experience has shown that in many small plants there is a tendency to maintain or create controls that are not acceptable minima for the complex pattern of today.

Contrasting this, with the pressure of competition becoming increasingly keen, the larger organizations have seen fit to "tool up" their control departments even as they equip their production departments, for they recognize that money spent for adequate control provides insurance of a high order.

By C. LLOYD THORPE

Instructor of Production Management and Production Control, School of Management, Golden Gate College, San Francisco.

This is the fourth in a series of articles by Mr. Thorpe dealing with production problems in the small plant.

Current periodicals give much space to the achievements that are resulting when controls give management the kind of information from which intelligent decisions can be made. This positive trend is still coming primarily from big plant operations, however. When a small plant takes such a progressive step, that's news!*

In a previous article in this series reference was made to an harassed small plant executive who confessed that "when I think of the little bit of information I have to help me make up my mind, it scares the hell out of me." There are just

*See "Production Cost Controls Save Small Plant's Bacon," *Western Industry* (Sept.)

lots of small plant operators in the same predicament.

The premise here is that such situations are unnecessary from whatever angle they are considered, because even from a cost viewpoint it can be shown that a good control is usually no more expensive than a poor one. But transcending the price factor is the important consideration that good controls can eliminate completely some headaches that should be routine and of clerk-level importance, but which because of lack of control can consume a major part of management time.

So if it is conceded that the small plant cannot much longer escape the necessity of being under real control, then it follows that management should really organize for it.

To present in one article the techniques of control for all aspects of small plant management would be an impossibility. So, since it is primarily the philosophy of control that is of concern here, only one specific field will be used for purposes of

illustration. It will be that of Product Labor Cost Control, for it is directly connected with the production department emphasis to which this whole series of articles is directed; further, it is a field of primary importance for it is at this point that worker productivity can be measured.

Let us therefore test a conventional jobbing and/or repetitive manufacturing

plant of modest size in the field of Product Labor Cost Controls, remembering the fundamental control requirements that they be (1) adequate, (2) accurate, and (3) current.

Adequate Control

To obtain adequate labor cost information, it will be necessary to employ a

method of accumulating the direct labor time spent on each part. (It is just as important to obtain carefully segregated indirect labor time, but this will not be considered here.) However, compiling time for complete parts is not enough because the total cost provides no technique for

(Continued on page 46)

Consolidating, Time, Payroll and Cost Data on One Time Card

At the beginning of each shift the employee will clock in on a new card at G (for beginning of payroll time) and likewise at GG (for beginning of job cost time). Commercial time clocks are available for this type of control. The employee will then report to his supervisor for his first assignment which, when received, will allow him to fill out in the first job section his payroll number C, the job number D of the assignment, and the specific operation number E on which he is working. Previously, of course, the employee will have filled in his payroll number at A and name at B.

When the first assignment is completed the employee will obtain verbal approval to clock out and this he will do at H. Immediately he will also clock in at HH, thus anticipating his second assignment and allowing no time to elapse between the first and second jobs so far as time card is concerned.

When he reports to the supervisor for the second assignment, however, the supervisor will check all entries made on the job section of the first assignment to verify that these entries are correct. When satisfied, the supervisor will approve the closing of the first assignment by initialling at M.

This procedure is followed for each assignment until the end of the shift, at which time the employee clocks out at L (for ending of job cost time) and at LL (for ending of payroll time). Thus payroll time and job time should always be in agreement.

It is recommended that the Production Control department (or some responsible person who understands shop operations) double-check the cards when the shift has been completed, for experience has shown this extra check practically assures a perfect time card audit. Whoever handles the Time Control (checking estimated vs. actual time) would verify that on all cards both G and GG, as well as L and LL, were identical. This done, the card could be severed at line 1 and the upper part could be sent to the Payroll department.

The Time Control personnel would post hours at T, V, X and Z, and would also post the calculated cost at U, W, Y and ZZ. Then the cards would be further severed along lines 2, 3, 4, 5, etc., to facilitate grouping by job number and operation number to post to the Time Control master records.

These cards would then be forwarded to the Cost department where they would be filed by job number and operation number.

| SMALLPLANT CO. | | IN 2-13-47 8.0 G | |
|-----------------|--|--|--------|
| TIME CARD | | OUT 2-13-47 4.5 LL | |
| 21886 | | HOURS | AMT. |
| A | | AA | DD |
| PAYROLL NO. 35 | | 8.0 | 12.240 |
| B NAME A. Smith | | BB | EE |
| O | | - | - |
| RATE 1.53 | | CC | FF |
| TOTAL | | 8.0 | 12.240 |
| 1 | | 21886 O.K. JKH M DESCRIPTION F 2-13-47 8.0 GG | |
| C | | PAYROLL NO. 35 | |
| D | | JOB NO. 12602-5 | |
| E | | OPERATION NO. 2 | |
| F | | HOURS 8.0 COST 3.060 | |
| 2 | | 21886 O.K. JKH N DESCRIPTION F 2-13-47 10.0 HH | |
| C | | PAYROLL NO. 35 | |
| D | | JOB NO. 202-4 | |
| E | | OPERATION NO. - | |
| F | | HOURS 1.7 COST 2.601 | |
| 3 | | 21886 O.K. JKH P DESCRIPTION F 2-13-47 11.7 JJ | |
| C | | PAYROLL NO. 35 | |
| D | | JOB NO. 13508-1 | |
| E | | OPERATION NO. 4 | |
| F | | HOURS 3.2 COST 4.896 | |
| 4 | | 21886 O.K. JKH Q DESCRIPTION F 2-13-47 3.4 KK | |
| C | | PAYROLL NO. 35 | |
| D | | JOB NO. 13800-1 | |
| E | | OPERATION NO. 3 | |
| F | | HOURS 1.1 COST 1.653 | |
| 5 | | 21886 O.K. R DESCRIPTION F 2-13-47 4.5 LL | |

Filled in by employee ABCDEF
 Clocked by employee GGG H HH J JJ K KK L LL
 O.K. by supervisor M N P Q R
 Filled in by Time Control next day OTUVWXYZ ZZ
 Filled in by Payroll next day AA BB CC DD EE FF

Tooling Up to Control Costs

(Continued from page 44)

management to control the cumulative cost of the part as it progresses through the various operations that transform it from raw material to its finished state.

It is this type of information that is of real assistance to the production department as it strives to reduce cost. So, it becomes necessary for control purposes to cost the labor by each operation. It is important to point out here that while operation sequence sheets—showing each progressive operation required to make the part—are used for Production Control purposes in many plants, the contribution that such sheets can make to improved Cost Control is not often stressed in the manner that this demonstrates.

Therefore the accompanying time card, which is basic for the accumulation of direct labor time, has been designed to include the operation number on each section so that if two different operations on the same part are performed by the same operator, he will be required to punch in and out for each case. Failure to do this defeats the requirement of adequacy.

Accurate Control

Here is a great source of difficulty in maintaining real control in many small plants. Even with a time card that has been designed for control purposes, it is obviously impossible to obtain control if the cards are not properly filled out.

In one small plant a careful analysis of the situation revealed that prior to the installation of real supervisor responsibility for employee time card accuracy (not just a perfunctory signature at the end of the day), over 85 per cent of the time cards had some inaccuracy that could not have been detected by a conventional Cost Department procedure.

After a thoroughgoing indoctrination of all personnel regarding the importance of time card accuracy, supplemented by a double-check system through the Production Control department, these inaccuracies reduced to about 4 per cent in less than 30 days. The significance of this original bad situation cannot be overemphasized because many Cost departments continue to grind out labor cost data to the fourth decimal place based on time cards whose design is admittedly faulty and totally inadequate for accurate control purposes.

The accompanying time card has therefore been designed to fit a small plant arrangement which has close contact between the worker and his supervisor, and

it places real responsibility for accuracy right at the worker-supervisor level. It is further suggested, however, that all time cards pass through the Production Control department or through the hands of someone in a responsible position who can double-check the accuracy of the worker-supervisor team in this regard.

Actually, one of the most effective small plant production control techniques is to control the operations through the time cards, and it is suggested that for plants with control problems of this type the coordination of Time Control and Production Control be considered.

(And if the Production Control department is in possession of the estimated time for each operation, it is in a position to furnish the Production department and higher management with daily information on Time Control—actual vs. estimated time—thus completely relieving the Cost department of this load. Where an effective Production Control department is employed, this method can be highly recommended out of personal experience.)

Current Control

"Too little and too late" has real significance in the matter of product labor cost control. In many small plants the Production department simply has no practical assistance from control departments because the information is not available soon enough to allow remedial action. A complete cost analysis 30 days after a production run has considerably less significance than the Production department than a daily recap of every operation of all jobs as of the previous day.

In spite of this practical need, many control departments continue to do the traditional job, which is to say they do it *their* way instead of taking time off to analyze their position as a service department to facilitate the control of production, and as a consequence doing the job in a manner by which it can really serve that end.

It is to facilitate this that the accompanying time card has been designed to make possible the compilation of control information without interfering with either the Payroll or Cost departments. The payroll section is independent of the rest of the card.

The arrangement of the job sections is such that the job cost distribution can be made simply by filing each section by job and operation number sequence so that posting to a ledger is only necessary for closing purposes. Instead, daily posting

would be done for Time Control purposes in recap sheets that would indicate the current status of each operation on every job in process both with respect to estimated time and actual time.

To illustrate the ease by which such a procedure can operate, in a plant of about 100 direct labor employees primarily engaged in jobbing of machined parts, one clerk handled all the conventional Production Control functions and prepared the Time Control sheets within two hours after the start of the day, so that management had six hours each day to analyze the previous day's activities for possible preventive or remedial action. It is apparent that with the advantage of such control, the cost of that employee was negligible.

Applies to Other Controls

As previously indicated, the field of Product Labor Cost Control with its accompanying time card has been selected only as one illustration of the basic considerations that must be given to these control tools if real control is to be expected from them. This would therefore apply equally to inventory control (or any other).

Techniques for making inventory controls adequate, accurate and current would logically follow the same procedure. And if emphasis is again put on control as a service, generally speaking there is no reason in the small plant why the inventory should not be under control always.

Yet many small plants have no control at all in this regard, or else they have such an inferior one that only a physical inventory can give a true picture of conditions (but here again the inventory value is calculated to the penny on the monthly statements and is used by top management accordingly).

In conclusion, attention is directed to the fact that in laying out the design of the accompanying time card, nothing much was added to what would probably be a minimum payroll and cost arrangement. But the design incorporated a *planned* procedure which was such that, upon completion of the time card by the employee and his supervisor, certain techniques could go into action which would give invaluable control information almost at once. No appreciable increase in personnel would be required to effect such an arrangement.

This illustrates that the price small plant management will have to pay for some of its so-far-ignored requisites is so insignificant that to delay further in rolling up the sleeves for action on the control front is to procrastinate beyond the point of good reason. Maybe if such action were taken, some of the dark clouds now looming on the horizon would ultimately precipitate into the books as black ink.

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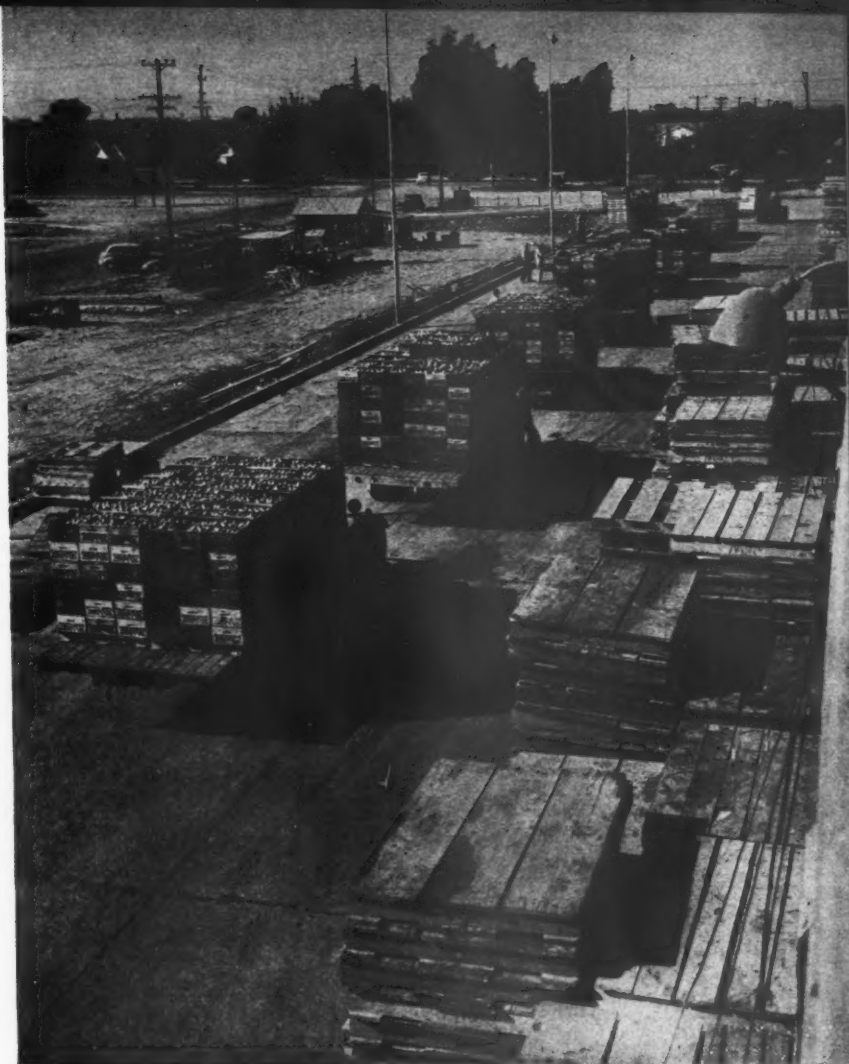
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• Produce trucks from surrounding San Joaquin Valley farms roll up to the loading docks at the Modesto Refrigerating Company, which has storage capacity of over 1,000,000 cu. ft. a day and quick-freeze capacity of over 150 tons a day.

Streamlining Catches Up To The Frozen Foods Industry

FOR possibly the first time, a commercial refrigerating plant has been built from the ground up to serve the frozen foods industry. Until recently, because of its rapid growth, the industry has had to adapt existing facilities, add to or use those which, like Topsy, "just grewed."

Built to serve the frozen foods industry in three ways, the new plant of the Modesto Refrigerating Company, Modesto, Calif., provides quick-freezing facilities for food packers; furnishes cold storage facilities for both the frozen food packers and other commercial users; and manufactures refrigerant for sale to other concerns in the vicinity. All three facilities are in one building, designed materials handling-wise for quick freezing and storing with a minimum of hand labor.

The plant is the key attraction in a new industrial district for food processing and manufacturing plants. This Modesto Manufacturing District has been developed by the Modesto Terminal Company, a Beard enterprise, and is served by the Modesto & Empire Traction Company railroad. John A. Beard is president and general manager of the refrigeration company.

Development of such a three-way plant was possible because the need for it already existed. Located in the heart of the San Joaquin Valley, a large fruit and vegetable growing area, there was a great demand for both quick-freeze and storage facilities from companies who wanted to pack frozen foods at the point of production. Other packers were interested in purchasing refrigerant for pre-cooling or packing purposes in their own plants.

The company has been in the refrigerating business since the 1920's, and was one of the first to offer locker service in the West, but like other plants in the industry, it developed a unit at a time. Profiting by experience, the company designed the new plant to eliminate hand operations. It has been engineered throughout for palletized handling by lift trucks.

A unique feature of plant planning is provided in handling out-going products. A large canvas tunnel extends from each of the eight out-going railroad loading entrances to the refrigerator cars which are spotted on the double spur tracks at the side of the building. This tunnel insulates frozen produce from heat during loading. The 35-ft. wide loading dock is insulated as well, and three cooling units are placed along it.

The plant has a storage capacity of over 1,000,000 cu. ft. a day, and quick-freeze capacity of over 150 tons a day. In addition, refrigerant can be piped to any location within 1,000 ft.

To use the quick-freezing and cold storage services, three companies — John, Inglis Frozen Foods, Chapman Frozen Foods and Winter King Packing Company—have built plants side by side, behind the refrigerating plant and connected to it by a concrete runway, built 500 ft. long and 16 ft. wide for lift trucks.

In addition, the company pipes refrigerant to the California Turkey Growers Association and F. K. Floden & Co., turkey processors; and Pacific Grape Products Company, all located across the road from the plant. The turkey processors pre-cool their packs and Pacific Grape uses refrigerant for its canned frozen-food pack.

• A fleet of 11 fork-lift trucks transports all the produce, which is stored on pallets from the time it enters the plant until it is ready for shipment. Bottom, the quick-freeze tunnel room; top left, quick-freeze storage room; top right, freezing tunnel.

Still other concerns use only the cold storage facilities. Thus a virtual colony of food processors is growing up to use the three-way service.

As for plant design, the warehouse itself is 500x235 ft. It is divided into three sections, separated by hallways 24 ft. wide, on either side of which are four cold storage rooms, making a total of 24, each 50x70 ft. with 16-ft. ceilings.

The plant is equipped for temperatures ranging from minus 40 degrees to plus 35 degrees, and each room can be used for either high or low temperatures as the need arises. Four rooms have been especially built for handling poultry. Ammonia coils are located in coil bunkers in each room. All of these room coils are piped to the engine room and connected into suction headers which are in turn connected to the ammonia compressors.

There are 24 freezing tunnels in the main freezing room, each 4½x7x17 ft. In addition, there is a freezing room with no tunnels, for quick freezing of bulk products and those in large containers.

High speed axial vane fans circulate the air in each freezing cell through the overhead coil bunkers in each tunnel and back to the fans. Fans are 33 in. in diameter and each operates by a 7½-hp. motor. They can circulate 65,000 cu. ft. of air a minute.

Electric motors provide 1,500 hp. for operating the refrigerating equipment in the engine room, and a total of about 2,500 hp. to meet all plant requirements.

As part of the design for mechanized materials handling, all entrances to the rooms are equipped with flapper doors which the lift trucks can push open themselves as they approach with their palletized loads. Short-masted electric trucks are used to carry the self-stacking freezing trays into the freezing tunnels. Ample room has been provided for loaded trucks to pass in the aisles of the cold storage areas.

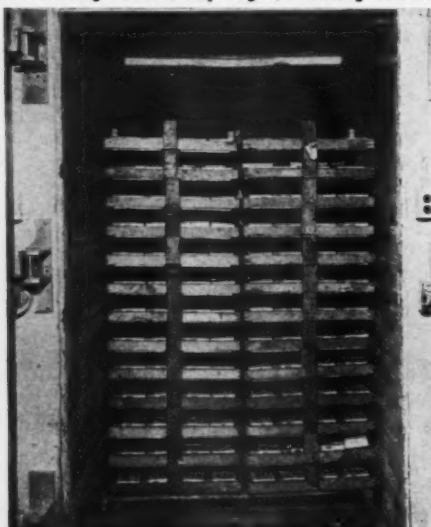
All products are stored on pallets. Pallets are never shifted from the time the load comes in, is frozen, and stored, until it is ready for shipment. Then, if the pallet does not belong to the processor, he must furnish his own to replace the one used by the refrigerating company.

As a result the company can load a car with meat in just 40 minutes. By integrating the car-loading with the icing of refrigeration cars at the company's original plant, and the shipping services of the railroad, the company offers unusually rapid service. For example, the U. S. Government has found it can get meat delivered at dockside in San Francisco for shipment overseas in less time from Modesto than from San Francisco warehouses.

For the most part, standard ammonia compressors made by York, Frick, Worthington and DeLa Vergne, of conventional vertical or horizontal design, are in use at the plant. Sufficient equipment has been installed to provide approximately 800 tons of standard refrigeration and 260 tons of booster capacity. This equipment was installed by the York Corp., Los Angeles, and the R. E. Manns Company, Wilmington, Calif. Phillips Refrigeration Service, San Francisco, did the engineering.

One piece of equipment installed by the Manns Company appears to have a widespread potential use in the frozen foods and marine refrigeration field. This is the Fuller Company's rotary compressor which provides 60 tons of booster capacity at the plant.

The frozen foods industry has shown a good deal of interest in this equipment because it has few working parts, and no valves or other involved parts requiring frequent attention. It causes no vibration, requires only one-third of the normal installation space, yet has the same capacity



as conventional machines. Simple foundation requirements permit its installation on balconies or other remote locations, although this was not necessary at Modesto. Since the blades of the rotary compressor automatically compensate for wear, capacity does not decrease with the aging of the machine.

The Manns Company was instrumental in getting the Fuller Company in Catawauqua, Pa., to adapt its machine, formerly used with other gases, for refrigeration work. This necessitated the addition of a special lubrication system which would operate at very low temperatures, and a change in the construction. Because of the corrosive effect of ammonia, the compressor could no longer be made with bronze parts but had to be of all steel and cast iron construction.

The Modesto installation is the first compressor of the Fuller type to be put in ammonia service in the country.

C. C. Berkley, plant engineer for the Modesto concern, reports that the compressor has been "satisfactory" during the time it has been in operation. To date, after a year of operation, the company has had no repair or service requirements on the machine.

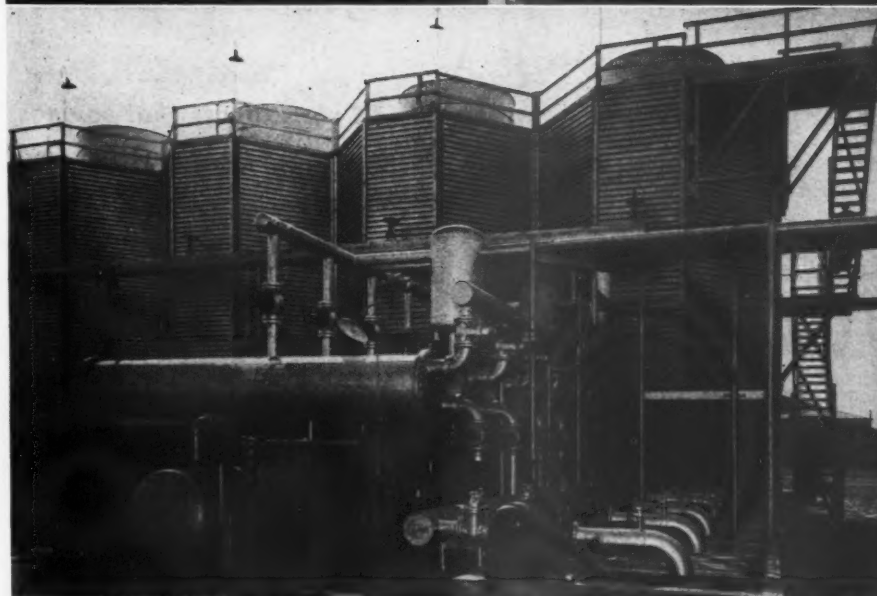
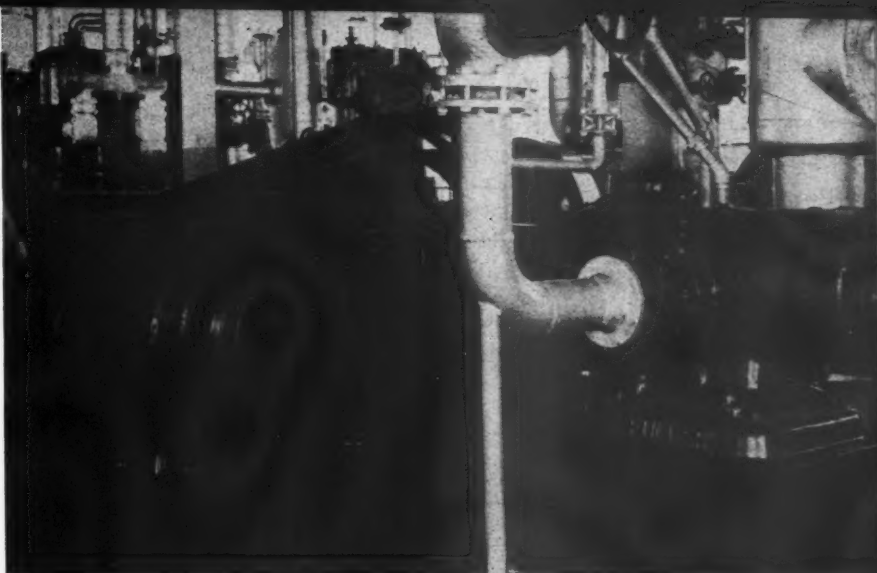
A safety feature of the plant having wide application in fields requiring high voltage circuit breakers, has been designed by Mr. Berkley himself. He has located all such controls outside the transformer cage, so that employees need not enter it to handle the high voltage circuit breaker.

A push-button station was placed on the main switchboard. This operates a solenoid coil for tripping the main circuit breaker in case of emergency. Resetting of the circuit breaker is a manual operation. The lever mechanism was removed from the housing on the circuit breaker and installed in a housing having an access door on the outside of the transformer cage. Linkage between the two units is enclosed in a weatherproof housing. In the operating lever housing, a push-button station connects into the tripping circuit.

The company has not solved all its shipping problems. This spring it built a truck-height loading dock in the front of the building where refrigerated trucks can load frozen produce quickly. So far no canvas tunnel has been devised to protect frozen foods from heat while loading trucks. This is one problem still to be solved.

This truck-height loading dock also has another purpose. Here unprocessed fruits and vegetables which the packer is unable to handle at the moment are picked up and carried to the cooler rooms, where they are held at 32 to 34 degrees until the processor can handle them. This extends the packets' operations and cuts spoilage to a minimum.

A special battery charging room with facilities for charging nine units at a time is located at one side of the plant. This



• Top, the Fuller rotary compressor, especially adapted equipment which provides 60 tons of booster capacity at the plant. Bottom, cooling towers and ammonia condensers.

means that no electric trucks need to be inoperative because the batteries need charging. This is important when the plant is in 24-hour operation at the peak of the processing season.

The company uses a total of 11 fork lift trucks made by Clark, Automatic and Towmotor. While both gas and electric models are used, the gas models do not enter the freezing rooms. They transport packaged products to the doors of the plant where the electric trucks take over. The frozen foods plants use Thomas Industrial Trailers, platform size, 36x96 in., behind the lift trucks to increase load capacity.

Modern materials handling methods are not limited by any means to the plant of the refrigerating company. Other companies utilizing their facilities dovetail their operations for maximum efficiency.

At the processing plant of the California Turkey Growers Association, all operations are handled mechanically. Equipment was manufactured by the Barker Poultry Company, Ottumwa, Iowa.

Demand for service from the refrigerating company has been so great that it is already having to think about extending the plant facilities just completed last year. The company took this possibility into consideration in planning the new plant, and can build an additional storage and freezing unit at the same level, across the tracks if need be, which will use the same refrigerant facilities.

The plant worked to 100 per cent capacity in last summer's packing season, and at the present time, nearly 90 per cent of the cold-storage capacity is in use. It has not been able to handle all the business requested.

Wherever materials are to be handled, there some business organization is either making or losing money, perhaps an amount large enough to mean the difference between profit or loss on the entire operations of the company. For that reason, "Western Industry" provides a continuous editorial service to its readers on materials handling developments and problems. The accompanying article is another of "Western Industry's" regular features on the subject of materials handling.

How Delivery Costs Were Halved With a Pallet-Truck System

Coca-Cola expects that savings from its new plant-to-warehouse material handling system will pay for the electric trucks in less than two years.

COST BREAKDOWN OF THE TWO LOADING METHODS

Old System

2 highway truck loads a day—capacity 954 cases per load—1,908 cases

| | | | |
|--------------------------------|--------------------------|-------------------|---------|
| 1 Driver..... | 10 hrs. (1 hr. overtime) | at \$1.35 per hr. | \$14.85 |
| 1 Helper | 10 hrs. (1 hr. overtime) | at .95 per hr. | 10.45 |
| 1 Lift operator at main plant | 4 hrs. | at 1.20 per hr. | 4.80 |
| 2 Helpers loading at main pl't | 4 hrs. ea. | at 1.00 per hr. | 8.00 |
| 1 Helper unloading at whse. | 4 hrs. | at .95 per hr. | 3.80 |

TOTAL COST \$41.90
or \$.022 per case

With Fork Trucks

2 highway truck loads a day—capacity 780 cases per load—1,560 cases

| | | | |
|--------------------------------|--------|-----------------|---------|
| 1 Driver..... | 8 hrs. | at 1.35 per hr. | \$10.80 |
| 1 Lift operator at main plant | 2 hrs. | at 1.20 per hr. | 2.40 |
| 1 Shipping clerk unloading.... | 3 hrs. | at 1.00 per hr. | 3.00 |
| with fork truck at warehouse | | | |

TOTAL COST \$16.20
or \$.0104 per case

ESTIMATED SALES AT WAHIAWA: 300,000 cases per year
COST OF HANDLING:

| | | |
|-----------------|-------------------|------------|
| OLD SYSTEM..... | 300,000 × \$.022 | \$6,600.00 |
| NEW SYSTEM..... | 300,000 × \$.0104 | 3,120.00 |

SAVING..... \$3,480.00

THE ingenuity of the Coca-Cola Bottling Company of Honolulu, in combining a new pallet-and-lift truck system with an existing skid-and-platform truck system, has cut the cost of large volume inter-warehouse delivery in half.

This case is another illustration of the importance of a thorough comprehension of different types of materials handling systems in reducing distribution costs, one of the remaining major costs which is often excessive and which may be decreased in the interest of greater business security in an increasingly competitive world.

In addition to its regular deliveries to grocery stores, confectionery stores, drug stores, and other retail outlets, the Honolulu plant has the problem of daily delivering Coca-Cola in large quantities to a warehouse in Wahiawa, 30 miles distant. From this warehouse the Schofield Barracks and other outlets at that end of the Island are serviced. It is in the operations of loading and unloading this bulk delivery that the new evolution of the materials handling system has saved so much in handling costs.

Cases of Coca-Cola are stacked on skids as they come from the production line and four low-lift platform trucks are used in transporting them to the storage yard. Until recently the cases were loaded onto



• A self-loading high-lift fork truck loads pallets onto the trailer, an operation that was done by hand under the old system.

the inter-warehouse trailer truck by hand, but under the new system double-faced pallets are placed on the skids before loading, and (here is where the saving comes in) a self-loading high-lift fork truck lifts the loaded pallets onto the trailer. A similar truck unloads the trailer at the Wahia end.

Under the old system, 1,908 cases were handled per day, in comparison to 1,560 cases handled per day under the new system. Handling the additional cases necessitated additional labor, resulting in overtime costs not present under the new system.

Handling Cost Factors

To make the cost factors of both systems more comparable, the hours of overtime put in under the old system can be calculated at the straight time rate, giving a cost of handling equal to \$.0203 per case or a total cost of handling 300,000 cases equal to \$6,090. Comparing this

with the cost of handling 300,000 cases under the new system gives a saving of \$2,970.

Type of Pallets Used

Pallets used in this operation are of the double-face type and are 5x5 ft. in overall dimensions. Heavier construction of the upper deck gives added strength in supporting the load, a full load being 78 cases. Every other layer of cases is arranged "cross grain" for added load stability.

The inside trailer dimensions are 26 ft. 4 in. by 8 ft. 6 in., and 10 pallets, or 780 cases, make a truck load.

A second traffic operation under revision is the retail distribution system. The operations involve the conventional deliveries to various dispensers, such as grocery stores, and requires the unloading of a few cases at a time. The town trucks have also been loaded by hand, cases being transported from the production line to

the truck by the skid system previously mentioned, but special racks are now being constructed with pallet bottoms so the town trucks may be loaded by the use of fork trucks. The special racks will make it possible for the driver to remove individual cases without disturbing the rest of the load. Each truck carries a small hand truck which the driver uses in delivering small lots to retail outlets.

Savings Will Pay For Cost of Trucks

It is expected that the actual savings made possible by the new plant-to-warehouse material handling system will pay for the cost of the electric trucks in less than two years—especially when it is considered that the savings here discussed pertain only to those effected in the transportation of full cases, and that the savings effected in returning empty cases are equally as great. The contemplated town truck loading system is also expected to pay for itself in a short time.

One of the best-informed writers at the Nation's Capital, Arnold Kruckman, presents each month authoritative comments on political developments and their practical application to industry of the West. Any reader who wishes additional information may write to him directly, using business letterhead, at 1120 Vermont Avenue, N.W., Washington, D.C. Inquiries will be answered free of charge. You also are invited to contact him personally in Washington. Copies of pending congressional bills may also be obtained free of charge.

Washington's Slant On Kaiser's Plea

His unorthodox approach may have caused RFC to turn down Fontana proposal, despite imposing support from the West

By ARNOLD KRUCKMAN
Washington D. C. Editor of
Western Industry

WASHINGTON, D.C. — Late in July this reporter was a guest at a dinner given in the Vice-Presidential dining room on the Senate side of the Capitol, which was designed to make more friends for Henry J. Kaiser and western steel and the Fontana plant.

It was a notable gathering. Senator Vandenberg, and Senator White, the Republican floor leader came in and remained as long as they could remain away from the Senate floor—there were still night sessions then—and Senators Styles Bridges, Owen Brewster, Harry P. Cain, Guy Cordon, Homer Ferguson, Albert W. Hawkes, William F. Knowland, George M. Malone, Joseph C. O'Mahoney, Kenneth S. Wherry and C. Wayland Brooks—a thoroughly representative national group—were among the last to leave the dinner. There also were present conspicuous Representatives, such as Congressman Everett H. Dirksen, Gordon L. McDonough, Harry R. Shepard, and John Philips.

The West itself was represented by outstanding citizens from industry and business, men such as Morris Pendleton, of the Plomb Tool Company, Los Angeles; Louis Lundborg, president of the Western States Council, and executive of the San Francisco Chamber of Commerce; Sidney Woodbury, Woodbury & Co., and president of the Portland Chamber of Commerce; William Schmitt, Schmitt Steel Company, Portland; Henry Gede, Independent Iron Works, San Francisco; R. W. Isaacson, Isaacson Iron Works, Seattle; Jim Bone, secretary, Western States Council, and manager of the Industrial Department of the Los Angeles Chamber of Commerce; F. J. Robbins, Plomb Tool Company, Los Angeles; A. W. Walker, San Bernardino Board of Supervisors; Robert Miller, Southwest Engineering Co., Los Angeles; Walter Williams, president, Continental Co., Seattle; Christy Thomas,

Seattle Chamber of Commerce; Ronald Ketcham, Los Angeles Chamber of Commerce; W. B. D. Dodson, Portland Chamber of Commerce; and Frank McKee, San Francisco Chamber of Commerce.

Support For Kaiser

This list is repeated in detail in order to demonstrate clearly that men of substance journeyed thousands of miles from the Far West to support the effort to secure an adjustment for Kaiser in his financial relations with the Reconstruction Finance Corporation. The outstanding legislators of the nation came partly in deference to their fellow members of the Congress from the West, but chiefly because they wished really to understand the Kaiser problem. Apparently the dinner was given by the Western States Council, although Senator Harry P. Cain, of Washington, functioned as host, with Senator George W. Malone of Nevada as co-host. It was made emphatically clear that the Western States Council, representing a large number of Western commercial and industrial organizations, in principle supported the Kaiser ambition to scale down the indebtedness to the RFC, if it could be accomplished fairly, and made comparably with the deep cut allowed in the valuation of the Geneva plant when it was acquired by U. S. Steel.

There was little doubt that the vigorous and continued operation of the Fontana steel plant was the thing, not the personal fortunes of Henry J. Kaiser, so far as the people present at dinner were concerned. The attitude was in no sense a reflection on Kaiser, or on Kaiser's operations. The point was that the West wants a sound and stable steel plant in Southern California because the West is very short of steel.

Kaiser himself said the other day, here, the West needs 1,600,000 tons of sheet steel, and that the over-all need of all shapes and kinds exceeds 6,500,000

tons. He did not say it, but this reporter, who has made a special running study of the steel situation, knows that the West has about as much chance of getting such a volume of steel as that classic snowball has of surviving near a steel furnace.

Senator Martin's steel section of the Senate Small Business Committee has convincingly demonstrated that the productive capacity of the nation's steel plants is very short of the nation's needs, and that we are confronted with a steel shortage which will grow steadily because the backlog of requirements is enormous, and the population is growing, which means the per ton need of steel per person will steadily increase.

Marshall Plan Requirements

Moreover, we are now faced immediately with the potential needs of the Marshall Plan which involves somewhere between 8,000,000 and 10,000,000 tons, "right off the cuff," for the rehabilitation of Europe, plus, at least another 5,000,000 tons for Latin America and other regions of the globe. There is no doubt whatever that a full-scale performance in supplying steel abroad means that thousands of smaller manufacturers of steel products will be wiped out simply for lack of materials, and during a period when the consumer demand for steel products at home is greater than it has ever been in the history of the nation.

As you know, despite the July demonstration in force, the RFC turned down the Kaiser appeal that the indebtedness to the Government on the Fontana plant be reduced in the same proportion as was allowed to U. S. Steel when it bought the Geneva plant at 20c on the dollar. The RFC pointed out, with apparent reason, that the Geneva plant was purely a Government operation, initiated by the Government

(Continued on page 54)

Do these false beliefs keep you from converting to aluminum?

(Below are 4 *misstatements* commonly applied to aluminum. Have you made any of them?)



1. "Aluminum is not readily adaptable to my product"

Fact: Kaiser Aluminum comes in a wide range of alloys to meet every type of manufacturing operation, and can be formed, drawn, spun, brazed or joined. It can be painted or polished, or finished in almost any way you choose. To select the alloy specifically suited to your requirements, simply call on a Permanente Metals' engineer.



2. "Aluminum costs too much"

Fact: While prices of other materials have steadily risen, aluminum is now *at the lowest price in history*. Figured *not* on a per pound basis, but on *unit cost*, aluminum prices (which include freight charges) compare favorably with those of any other metal or material. In addition, savings made on handling, finishing and shipping cut costs substantially.



3. "My competitors aren't converting. Why should I?"

Fact: Scores of manufacturers are speeding their products to market — by converting to aluminum. That's true of makers of general appliances, residential buildings, air conditioning units, heating and ventilating ducts, garage doors and window frames, office appliances and cabinets . . . *plus dozens more*. Their experience can help *you*.



4. "I can't be sure of a steady, long-term supply"

Fact: This is *especially* wrong *today*. For Permanente Metals now offers you a new source of aluminum . . . Kaiser Aluminum. In but a single year of operation Permanente Metals' mammoth aluminum plants produced 175 million pounds of plate, sheet, and strip aluminum. Almost as much as the entire industry produced in the most productive year before the war.

To the above facts add these . . .

Aluminum's resistance to corrosion cannot be matched. Nor can its strength per pound — it can give you the strength of steel at one-third the weight.

Aluminum's appearance can put an extra sparkle of *saleability* on many products, giving them a competitive edge.

In the light of all these *facts*, can you

afford NOT to investigate the possibility of converting to aluminum? Call any Permanente Metals' office and an experienced sales engineer will be on the job, for *you*!

Ready to serve you—today . . . **Kaiser Aluminum**
a Permanente Metals product

DISTRIBUTED BY PERMANENTE PRODUCTS COMPANY, KAISER BLDG., OAKLAND, CALIFORNIA . . . WITH OFFICES IN:
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Chicago, Ill. Cincinnati, Ohio Cleveland, Ohio Detroit, Mich. Boston, Mass. Hartford, Conn. Buffalo, N. Y. New York City, N. Y. Philadelphia, Pa. Washington, D. C.

Washington Slant on Kaiser's Plea

(Continued from page 52)

and financed by the Government on its own. It sold the plant as the law required, with the consent and the approval of the Congress and the Department of Justice.

The Fontana operation, on the other hand, while designed for war purposes, was based on a loan made to Kaiser, on a straight business basis. The relation between the RFC and Kaiser was that of a banker and its client. There were of course equations that do not come into the normal business between a bank and a client, such as the use of the products of the plant

for Government war needs, with all the abnormal profits, however, implied in war contracts.

There are reasons to believe that the Fontana business would be settled now, if the Kaiser approach had been different. The RFC today is supposed to be dominated largely by John Steelman, one of the major thinkers in the White House. Steelman came from the schools, was once a labor conciliator, and is not exactly compatible with the type of industrialist, such as Henry Kaiser.

There is really the gap of an entire era between the Kaiser type and the Steelman type. Kaiser, as it is told here, really is one of the solitary survivors of the kind of men about whom Horatio Alger wrote. His extraordinary methods, his monumental driving power, and his ability to organize the technicians into a working machine, despite his own lack of knowledge of engineering and related skills, made him successful in the general construction field, and again came to the front in the war period when he built those extraordinary ships for the Maritime Commission, for the Navy, and tried to build airplanes.

Kaiser is, naturally, entirely unorthodox. He is unquestionably a genius. He has that irrepressible quality of the genius. If he is stopped at one place, he finds another out. This is the unpredictable quality which makes him a trouble and a nuisance to the orthodox. He doesn't follow rules—he makes them. He apparently is the last, or one of the last, active specimens of the trail-blazers who made America. They all had this intensely self-centered, driving, uncontrolled push which hurried them from one thing to another, or one place to the other.

The American world in the East, at least, has become more conventional. Most of the Easterners like two or three hours for lunch; and they like those interminable conferences. Also, they have some fears about what the other fellow may say, or think. The men from the schools by habit are restricted by well-grooved rules. Kaiser naturally is an irritant in their lives.

We are told here they had about decided to scale down his obligations to RFC, when he began his push for attention some months ago. It worried them, and it rather frightened them. As the Kaiser activity developed it took on some tinges of politics. The "regular" men in the seats of authority apparently were willing to decide his case on the basis of orthodox thought, but they were afraid of the kind of politics he plays. Whether it is true, or whether it is just gossip, this reporter cannot say, but the story on the Hill is that when the politics became more apparent, the legal section of RFC hastily advised that no concession be made to Kaiser.

The incident is revealing, even if it is apocryphal, because it demonstrates one weakness in the Kaiser way. He lacks a clear and subtle sense of public relations as it is practiced here in the East. He uses a bludgeon instead of Machiavellian diplomacy. Kaiser often gets something because he is trouble, with an upper case "T." But he would get infinitely more if he played the game as they now play it here.

His most recent approach to RFC, with his new proposal for a \$55,000,000 reduction of his debt, is a vivid illustration. He

(Continued on page 71)

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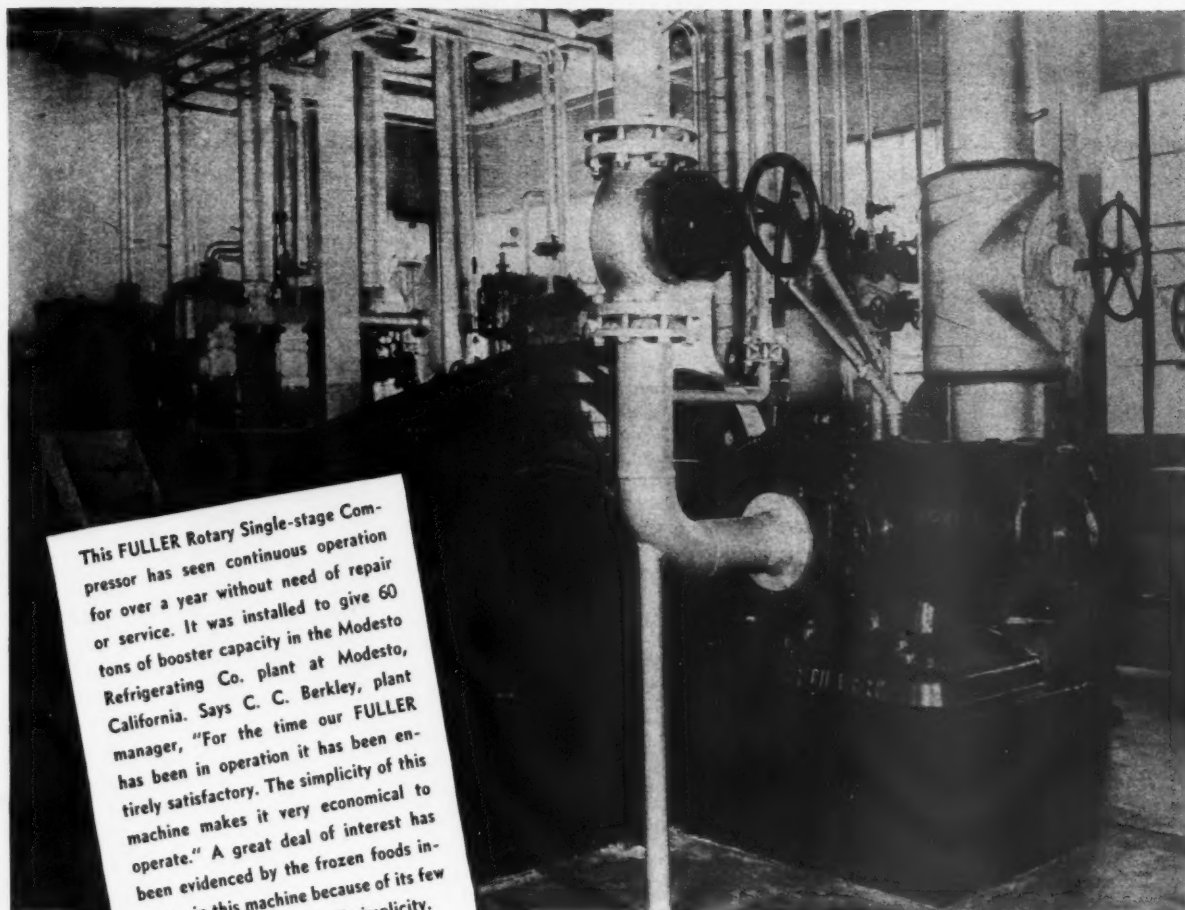
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FULLER Rotary Compressors offer savings to plants in every phase of industry — foundry, steel plant, cement plant, automobile plant, ice plant, copper mills and the petroleum industry—by reason of their smooth operation and space saving features as compared with conventional reciprocating machines of like capacity. Blades automatically compensate for wear, thus capacity output is maintained for the entire life of the machine. The power losses incurred by carrying high main-line pressures, and reducing a considerable volume of this air for low pressure work, involves a waste of power that warrants the most careful investigation. Available in single or two-stage units with base-type or separate intercooler. Capacities to 3300 c.f.m., actual free air, for working pressure to 125 lb. gage.

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C-135

WESTERNERS AT WORK...

California

Leaders



Philip S. Fogg

Philip S. Fogg, president of Consolidated Engineering Corp. of Pasadena, appointed to five-man U. S. Atomic Energy Commission by Chairman David E. Lilienthal. . . .

Manufacturing

Alan J. Anderson appointed manager of the American Potash & Chemical Corp. at Trona, succeeding Walter J. Metzger, resigned. Forest E. Branch, assistant manager at Trona, to be in charge of all non-technical operations. Robert B. Coons upped to v.p.

Carl J. Dinic, formerly of San Francisco, appointed manager of commercial research for Rheem Mfg. Co., in New York.

Morrrough P. O'Brien, former dean of engineering, U. of Calif., has joined staff of Air Reduction Co., Inc. Mr. O'Brien to assume direction of general engineering, process engineering, and liquefaction research.

A. E. Witcher named superintendent of the lead and operating dept. at the So. San Francisco factory of W. P. Fuller & Co., succeeding J. W. Pitt, retired after 40 years' service.

Virgil E. Gray named pres. of Bay Cities Equipment, Inc., Oakland, Calif., succeeding Stanley S. Moore. Al Mason, Jr., appointed sec.-treas. in charge of sales promotion. . . .

Henry P. Nelson elected to board and named executive v.p. and gen. mgr. of Menasco Mfg. Co.; Gerald Preshaw, secretary-treasurer. . . .

Charles J. P. Hoehn resigned as president of Enterprise Engine & Foundry Co., to be succeeded by William E. Butts, who was elected chairman of the board succeeding Mr. Hoehn. Mr. Butts is also v.p. of Gen. Metals Corp. Enterprise and Gen. Metals are subsidiaries of Transamerica Corp.

Vernon Nelson appointed head of estimating dept. of Pacific Press, Inc.

Hugh F. Colvin appointed treasurer of Consolidated Engineering Corp. . . .

Clifford M. Sayre has been appointed general works manager of the Sturtevant Div. of Westinghouse Electric Corp., to direct manufacturing operations at Hyde Park, Mass., Camden, N. J., La Salle, Ill., and Berkeley, Calif. He goes to Hyde Park from Sunnyvale, Calif., where he was works manager for Joshua Hendy Iron Works. . . .

Utilities

George H. Hager named engineer of electric operation of Pacific Gas and Electric Co., succeeding Dunlap D. Smalley who was promoted to v.p. in charge of P.G.&E. operations. Homer G. Kessling, electric supt. of East Bay division, appointed central area supt., replacing

Mr. Hager. Melville N. Clark, electric service supt. of E. Bay division, advanced to Mr. Kessling's former post, and Walter B. Allatt, his asst., named to succeed Mr. Clark.

Rubber

C. J. Coleman named gen. asst. to v.p. A. J. Stream of Plant Rubber and Asbestos Works.

Transportation

C. R. Harding, asst. to pres., S. P. Co., elected to presidency of Pullman Co.

I. T. Sorge announced in San Francisco as manager for Pacific Far East Lines' participation in movement of pipe line to Arabia for Arabian American Oil Co.

John G. McKean new v.p. in charge of administration and finance for Aviation Maintenance Corporation.

National Aviation Clinic has new member in Kenneth R. MacDonald of the San Francisco Chamber of Commerce. The clinic will be held in Springfield, Ill., in November.

Coastwise Line names Capt. Vance D. Trout v.p. in charge of operations, and E. A. Gardner district mgr. at Los Angeles and Long Beach.

Election of Allan A. Barrie as v.p. operations of California Eastern Airways with headquarters at Oakland Municipal Airport, has been announced by the pioneer coast-to-coast air freight carrier.

George Killion, former treasurer of the Democratic Party national committee, appointed new president of American President Lines, succeeding Henry F. Grady, who resigned to accept the ambassadorship to India.

Arthur F. Kelly has been named assistant to the president of Western Air Lines, Terrell C. Drinkwater, with offices in Los Angeles. He was promoted from general traffic manager. . . .

H. P. O'Leary appointed special representative, public relations department, for Coast Lines, Atchison, Topeka and Santa Fe Railway, at Los Angeles. . . .

Aircraft

John B. Clark named director of industrial relations for Northrop Aircraft.

Serge F. Ballif, Jr., elected to board of Aviation Maintenance Corp.; Orville E. Mohler named mgr. of domestic and foreign military sales.

Oil

Seaside Oil Co. named Harry A. Jackson president; R. J. Irvin, v.p. and gen. mgr.

Shell Oil Co. appoints J. G. Jordan v.p. of marketing, succeeding L. G. McLaren, retired. He formerly was sales manager. . . .

J. H. Osmer, new secretary of California Research Corporation, of Standard of California. B. W. Pickard, assistant to the v.p. of Standard of California. Herbert D. Armstrong, newly appointed chairman of the board of Standard Oil Company of California, and B. M. Berry, asst. mgr. of product acceptance dept.

Oronite Chemical Co., San Francisco, subsidiary of Standard Oil, appoints Robert I. Stirton as manager of its product development division.

Government

War Assets Administration announced two new staff appointments: J. W. Palmer, Jr., spec. asst. to Zone Administrator R. B. Bradford; Donn A. Biggs, deputy zone administrator, for the office of real property succeeding Robert Fabian.

Ronald W. Houghton, special asst. to Director of the U. S. Conciliation Service, will join staff of Institute of Industrial Relations at U. of California at Berkeley.

Metals



R. J. Tremblay

R. J. Tremblay appointed assistant general manager of Bethlehem Pacific Coast Steel Corporation's Los Angeles plant. . . .

Charles A. Evans of the Chicago office appointed assistant production manager for castings division of ALCOA, in the Vernon, Calif., plant. . . .

Automobile Manufacturing

Kaiser-Frazer Corp. appoints Sydney W. Taylor, Kaiser engineer from Portland, Ore., to general manager of the recently purchased K-F foundry at Dowagiac, Mich. . . .

Walter J. Cooper appointed assistant West Coast regional mgr. of Ford Motor Company in Richmond. . . .

J. Bronson Overby named director of industrial relations at the Van Nuys, Fisher Body Division, General Motors Corp. . . .

Charles E. Mudie appointed resident controller of Fisher Body, L. A. plant.

Foods

H. E. MacConaughy, v.p. and gen. sales mgr. of Hawaiian Pineapple Co., appointed chairman of the executive committee of the National Canners Assn.

New Hawaiian manager for C. & H. Sugar Refining Corp., Ltd., at Hawaii, is Leonard W. Crosby. . . .

Frank B. Cliffe, formerly asst. controller of G.E. for 27 years, named controller and treasurer of H. J. Heinz Co. . . .

Kraft Foods Co. named John J. Downey central district manager with offices in San Francisco. G. E. Doolin named mgr. of the Portland district and Newton D. Towse named Spokane manager.

Paul Menconi appointed supt. and Ted Gottman production mgr. of Sierra Candy Co. . . .

Colorado

Robert W. Hendee, pres. Colorado Interstate Gas Co., named trustee of Colorado College, Colorado Springs.

Idaho

L. S. Purvis, asst. mgr. of Miami, Fla., C of C, named chief of transportation for Idaho Public Utilities Commission, succeeding C. F. Reynolds, resigned.

Committee for Apprenticeship Training in Idaho named by governor as follows: J. W. Brennan, Pocatello, Idaho Chapter of the Ass. Gen. Contractors of America; William J. Hynes, Union Pacific R.R., Boise; David S. Troy, Potlatch Forests, Inc., Lewiston; John Schoonover, Idaho First National Bank, Boise; J. B. Haffner, Bunker Hill & Sullivan Mining Co., Kellogg, president of the Idaho Mining Assn., and Harry A. Elcock, mgr., Amalgamated Sugar Co., Twin Falls, pres. Idaho C of C.

P. E. Roach of Boise, new pres. of Northwest Electric & Power Assn., succeeding James J. Polhenus of Portland. W. L. Thrailkill, Spokane, v.p.; N. C. Webb of Seattle, v.p. for Washington; C. J. Strike, Boise, v.p. for Idaho; J. E. Corrette, Jr., Butte, for Montana; E. F. Pearson, Portland, for Oregon; R. H. Ashworth, Salt Lake City, for Utah, and P. M. Morren, Vancouver, for British Columbia.

Montana

H. F. Miller, Tulsa, Okla., appointed v.p. of Carter Oil Co., Billings. . . .

Glen Frisbie, Bozeman, named asst. supt. for Montana Power Co.'s Livingston-Bozeman district. . . .

William V. Gannon promoted to gen. supt. of Montana Flour Mills' Montana plants. E. S. Shoemaker transferred from Harlowton as supt. of Great Falls branch of Montana Flour Mills.

Willard H. Lamphere named assistant director of Great Northern R.R.'s dept. of agriculture and mineral development in Cascade. . . .

Gerald J. Skibbins, industrial consultant, appointed field representative for industrial development division of Montana C of C.

Oregon

Paul Haberfeld, winter sports designer and mgr. for the Jantzen Knitting Mills, Inc., has been elevated to head designer for all outdoor divisions of that concern, at the home office in Portland.

E. F. Pearson appointed asst. gen. mgr. of the northwestern division of Pacific Power & Light. Cecil Root appointed Vancouver district manager. . . .

John N. Butler, U. S. Bureau of Mines, Albany, and Arnold L. Henny, engineers corps, Portland, newly appointed to membership of state board of engineering examiners. Butler will represent mining engineers and Henny civil engineers.

Vernon M. Murray appointed mgr. of the Puget Sound district for Bonneville, at Seattle, succeeding J. Frank Ward, who is now mgr. of Tacoma municipal power system.

Adams Portable Spot Welder Co., Portland, names L. G. Buckler as general manager. . . .

Utah

P. L. Shields, v.p. and gen. mgr., U. S. Fuel Co., Salt Lake, appointed to NCA Marketing Committee. Nat'l Coal Assn. declared appointment of far Western member necessary because of increasing interest in the coal heating service program throughout the West.

D. D. Moffatt, v.p. and gen. mgr. of Utah Copper Div., Kennecott Copper Corp., elected to board of the Utah-Idaho Sugar Co.

(Continued on page 58)

CLARK Electric Fork Trucks cost less!



TRUCLOADER—CAPACITY 1,000 lbs.

... BECAUSE OF ECONOMIES RESULTING FROM MASS PRODUCTION OF MAJOR UNITS IN CLARK'S OWN PLANTS—ASSEMBLY-LINE PRODUCTION OF FORK TRUCKS, BOTH ELECTRIC AND GAS-POWERED—MAXIMUM INTERCHANGEABILITY BETWEEN GAS AND ELECTRIC MACHINES OF LIFT MECHANISMS, AXLES, WHEELS AND MANY OTHER PARTS.

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OTHER PLANTS—BUCHANAN, JACKSON, BERRIEN SPRINGS, MICHIGAN

WESTERNERS AT WORK...

(Continued from page 57)

Washington

D. E. Eichelberger, v.p. of American-Marietta Co., is new resident mgr. of the firm's Pacific Northwest operations, which include its adhesive, resin and chemical division, and Schorn Paint Mfg. Co., both with plants in Seattle. . . .



D. E. Eichelberger

Richard C. Schank in charge of newly opened offices of Tait Stevedoring Co. in Tacoma and Olympia.

E. C. Dohm, Olympia, named executive sec. of new state Board of Registration for Professional Engineers and Land Surveyors. Other members of the board are E. B. Crane, Seattle; J. P. Hart, Tacoma; M. K. Snyder, Pullman, and R. G. Tyler, Seattle.

K. W. Sawyer, agricultural department mgr., designated secretary of Willamette Valley Project committee, replacing Don Lane. R. L. Clark of Bodine and Clark Commission Co., is Multnomah county committeeman.

Roger Oscarson appointed manager of Northwest Mining Association. . . .

L. E. Karrer appointed executive v.p. of North Coast Transportation; T. C. Howe, new mgr., and P. W. Clayton, traffic mgr. All promotions within the company.

James O. McIllyar of Seattle advanced to assistant to v.p. of the Milwaukee Road, with headquarters in Chicago.

George E. Voorhees elected pres. of National Plywood Distributors Assn., at annual convention in Seattle.

Walter Sharpe, Juneau, named assistant mgr. of Alaska Salmon Industry, Inc., with hqtrs. in Seattle.

John W. Bizot, new assistant chief metallurgist for Kaiser's Trentwood aluminum rolling mill. . . .

Carleton Shugg, gen. mgr. Todd Shipyards Corp., N. Y., named mgr. of Hanford plutonium-production plant, replacing Lt. Col. Frederick J. Clarke, acting area manager for the Atomic Energy Commission. Col. Clarke will report to the Army's special weapons base at Sandia, N. M., this month.

Rod H. Rauch, industrial service consultant of the Puget Sound Power & Light Co., appointed supervisor of the company's Rainier office, replacing M. D. Parrott, who has been transferred to Puget Power's Burien office in a similar capacity.

D. B. Jenks, newly appointed supt. of Great Northern R.R.'s Spokane division, succeeds I. E. Clary, who will act as supt. of Cascade division with headquarters in Seattle.

Lawson P. Turcotte, exec. v.p. and manager of Puget Sound Pulp & Timber Co., Bellingham, appointed to Canada-United States Committee of the U. S. Chamber of Commerce. . . .



Joe Weston

Joe Weston heads the field dept. of the Douglas Fir Plywood Association of Tacoma, the promotional organization for fir panel makers. . . .

John W. Riches named engineering assistant of Metallurgical Engineers, Inc., Portland. Mr. Riches has done special research work in the field of heat treatment of aluminum alloys for the Division of Industrial Research of the State College of Washington.

Wyoming

R. D. Nielson, regional stores manager for United Air Lines at Cheyenne, transferred to United's San Francisco maintenance base as asst. to the regional stores manager.

Associations Elect

R. H. Shainwald, executive v.p., The Parafine Companies, Inc., San Francisco, appointed to membership of Committee on Manufacture of the Chamber of Commerce of the U. S.

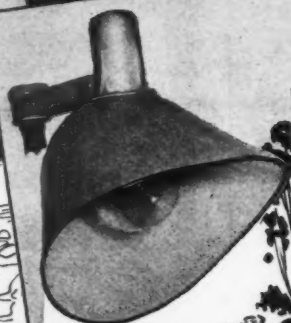
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Smoot-Holman lighting is filling ever greater needs in today's trend toward better living. Architects and home builders are planning patios and garden spots for exterior living space in every home. Smoot-Holman Outdoor Lighting Equipment doubles their usefulness by providing efficient, comfortable lighting for any desired area.

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From croquet and back-yard badminton to tournament tennis, Smoot-Holman Outdoor Lighting provides the means to extend the usefulness of recreation areas far into evening hours. Certified Smoot-Holman lighting equipment distributes light evenly, without glare—for home, playground, office, store or factory.

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FOR THE BEST IN INDOOR AND OUTDOOR LIGHTING IT'S SMOOT-HOLMAN



**45,000 Pounds
WHEELABRATED
in Three Hours**

Nearly 100 tons of castings, an accumulation of several days pouring, awaited the newly installed 36" x 42" Wheelabrator Tumblast at the Neville Foundry Co., No. Kansas City, Missouri. In just three hours and 12 minutes operating time twenty four tons of this pile had been spotlessly cleaned by the Tumblast . . . an average of 1000 pounds Wheelabrated every four minutes.

Contrast this cleaning efficiency with their former methods: four large tumbling mills, requiring six men to load them in addition to the one man working exclusively on the mills, with the noise and dust inherent in this type of cleaning. Overtime labor was excessive since the cleaning room, of necessity, worked all day Saturday and Sunday to catch up with production.

Now, castings are cleaned the same day they are poured. And they are actually clean. Floor space formerly required for cleaning is utilized for more productive operations, cleaning costs have been drastically reduced and the efficiency of the whole foundry has been stepped up due to the installation of the Wheelabrator Tumblast.

Mr. Leslie Neville, owner of the Neville Foundry Co., had this to say about the Wheelabrator:

"I appreciate very much the cooperation and engineering assistance which you gave us. We are indeed greatly pleased with the operation and the results attained.

"Prior to the installation of the Wheelabrator, we operated four tumbling mills which required the service of one man during the entire day. Due to the noise and dust it was impossible for our grinding crew to work with any degree of satisfaction.

"On our first day's operation of the Wheelabrator we

cleaned 48,000# of castings in 3 hours and 12 minutes of running time. There was no noise or dust with the operation and our castings came out looking as if they had been given a coat of aluminum paint. We feel that we are now in a position to give our customers a product which we will be proud of and at the same time at a considerable savings over previous cost. We are glad to recommend the Wheelabrator and want you to feel free to demonstrate this machine to any of your prospects."

Write today for further information on how you can increase your cleaning efficiency



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WORLD'S LARGEST BUILDERS OF AIRLESS BLAST EQUIPMENT

Labor Force Grows 51% While Employment Remains At Peak

Manufacturing accounts for 26 per cent of employment, up 6 per cent from 1940, but employment in services trades is down unexpectedly to 29 per cent

LOS ANGELES — Two postwar years have not completed this area's readjustment to normalcy, it is clear from the "snapshot" pictures taken by the U. S. Bureau of the Census simultaneously in selected key areas of the nation.

The special crews of enumerators who counted noses and asked Southlanders carefully framed questions regarding their employment, housing, and schooling brought forth evidence that while the local economy was developing such a huge industrial bulge, the distributive sections were falling behind.

No one was surprised when the figures just released showed that the number of people in the Los Angeles metropolitan area increased 35 per cent since the 1940 census, but the labor force grew 51 per cent. Every one knows, of course, that em-

REGIONAL REVIEW Tehachepi to Tijuana

ployment still is running at record peacetime highs, and by actual count, there are 40 per cent fewer people unemployed than in 1940, an unheard-of low percentage. But while thousands of new hands are now working at lathes or at white-collar industrial jobs, there has not been a corresponding influx into the service and distributive fields.

A breakdown shows 26 per cent of the population now at work in manufacturing, as against only 20 per cent in 1940. Construction accounts for 8 per cent instead of 6 per cent. Wholesale and retail trade, on the other hand, now employs only 22 per cent instead of 24 per cent of the labor

force and the service trades occupy 29 per cent instead of 32 per cent.

Most business men have expected that reconversion would mean a shift of workers from industry to service and retail trades until something like the normal proportions prevailed. On this basis, manufacturing industry, which has doubled its work force, now has nearly 100,000 too many employees and the distributive trades about the same number too few.

It should be remembered, however, that this same area had added 1,000,000 new people since 1940—1,000,000 new customers for manufactured products and services. If the wheels of industry can keep spinning at current rates, there ought to be much room for growth in the fields of distribution. And certainly it is well

(Continued on page 62)

CHEMISTS AT WORK—FOR YOU

In the specialized field of manufacture that we have chosen, our goal is to be the best—and along with this to enjoy a healthy growth. . . We are now in the process of doubling our plant capacity in Seattle, and have installed a pilot plant operation for obtaining practical experience with new products prior to presentation on the market. . . In New Westminster, B. C., construction is underway on an adhesive, resin and chemical plant of similar capacity, so that

we may serve still better the expanding plywood, pulp and paper business in western Canada.

For the entire forest products industry—and for the vigorous newcomer—plastics—the future is as big as it is challenging. In that future chemistry will play a major role, and the contributions of this organization will continue to be available through better products and better service.

Your inquiries are invited.

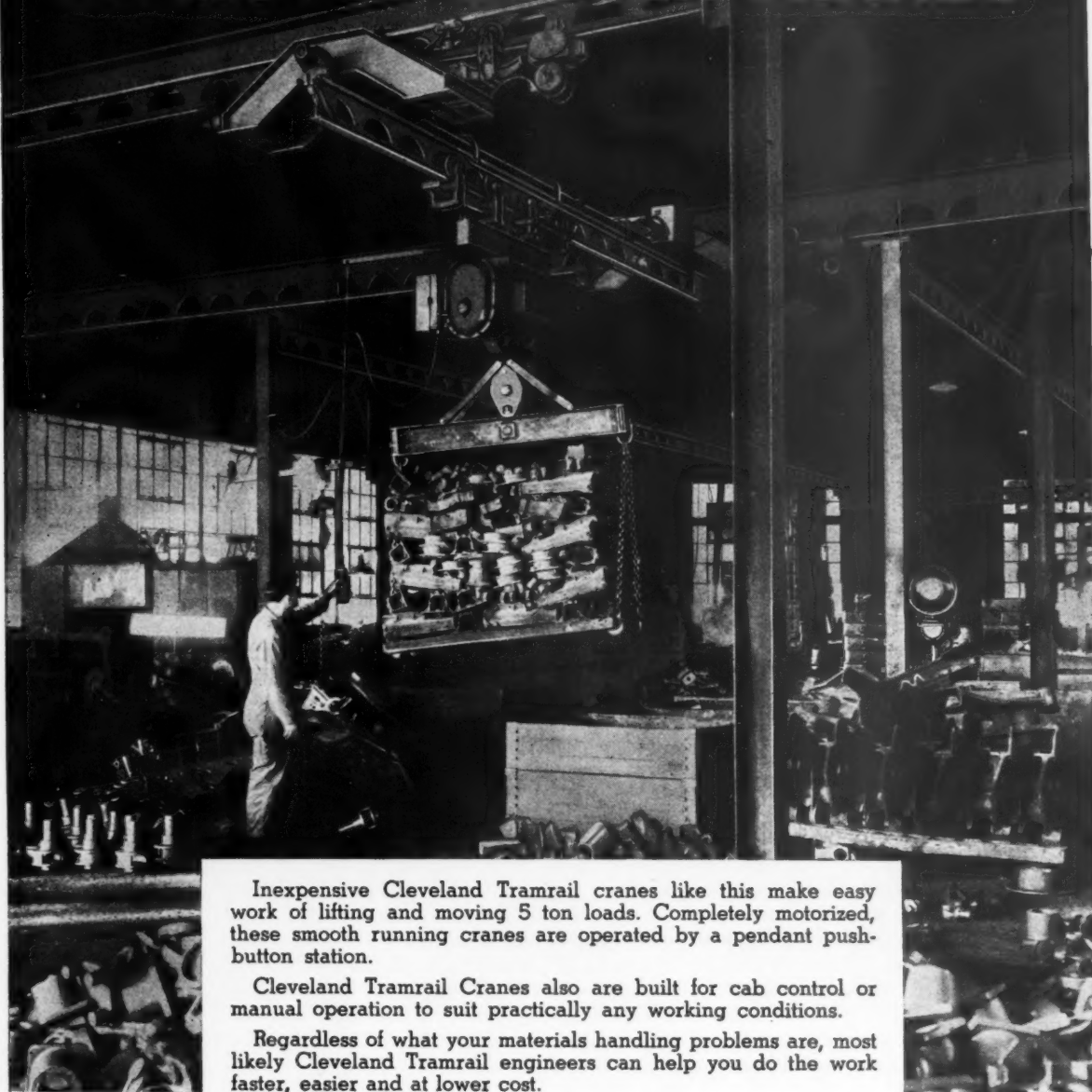


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5 TON LOADS *Easily Handled* with **MOTOR-DRIVEN CRANES**



Inexpensive Cleveland Tramrail cranes like this make easy work of lifting and moving 5 ton loads. Completely motorized, these smooth running cranes are operated by a pendant push-button station.

Cleveland Tramrail Cranes also are built for cab control or manual operation to suit practically any working conditions.

Regardless of what your materials handling problems are, most likely Cleveland Tramrail engineers can help you do the work faster, easier and at lower cost.



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CLEVELAND  **TRAMRAIL**
OVERHEAD MATERIALS HANDLING EQUIPMENT

Labor Force Grows 51%

(Continued from page 60)

recognized that local industry is going to have to bear down more heavily on the arts of selling, and to create distributive organizations adequate to proper marketing of its products.

In its reconversion upheaval, California for the first time in history spent more in unemployment benefits than was taken in through contributions. The Merchants and Manufacturers Association points out that this 18-month deficit is the State Fund's first since its origin 11 years ago.

In the first six months of 1947, civilian benefits have amounted to \$76,500,000, which is \$8,729,000 more than was collected. Thus, M & M puts it, "the equivalent of our entire work force already has been compensated for slightly more than a week's vacation so far this year."

Underscoring the magnitude of this area's reconversion problem is the fact that while California has about 7 per cent of the U. S. population, payments for unemployment insurance represent 15 per cent of the nation's total.

Aircraft Troubles Mount

Troubles of aircraft men are mounting, now that the industry is building only one-tenth as many planes as it was just before

Pearl Harbor. Sorely missed is the yeoman support of Government orders, and some of the civilian products that had promised to help take up the slack are not doing too well—as witness North American's sale of its Navion plane design, and Menasco's recent suspension of its line of midget washing machines.

Latest company to run into difficulty with its postwar product plans is Northrop, which, unlike a good many others, was able to show a small profit for the fiscal year just ended. Northrop's problem comes through its wholly-owned subsidiary, Salsbury Motors, Inc. (née Avion, acquired in 1945). Despite some success with its product, a motor scooter produced in a new factory at Pomona, Salsbury encountered such difficulties with high production costs and other factors that its officials have filed a bankruptcy petition, asking for a trustee to be appointed, pending refinancing or sale.

Now emerging from its initial venture into the rough waters of reconversion is another wartime veteran, Gladden Products, successor to the old Kinner Motors Company and step parent to the well-known Kinney Iron Works. Like Salsbury, Gladden also entered the light gasoline

motor field and is now launching a new product, a three-wheeled motorcycle of the kind used extensively by messenger and delivery concerns. Sole producer of such vehicles until now has been Harley-Davidson, whose product, more elaborate, sells at a much higher price.

After the usual period of operating in the red, Gladden reached the break-even point last April and appears to be headed for success.

Lockheed, too, is enjoying profitable operation of its new subsidiary, Pacific Finance Corporation, 85 per cent of whose stock was purchased recently by the aircraft firm. Earnings are running currently at nearly four times last year's rate.

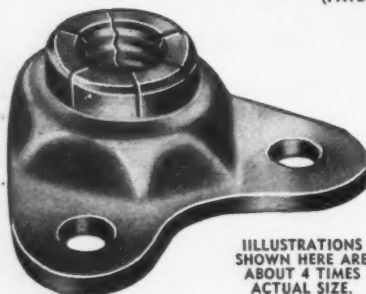
Companies Continue Research

Fortunately for the national security, the aircraft companies continue extremely active in research and development work, though these operations are not the profitable sort which make for solid financial sustenance. North American is well under way with its experimental rocket project in New Mexico. Northrop is undertaking a part in a CAA research program aimed at applying castored-wheel landing gear equipment to solve the problems of cross-wind landings. Menasco is concentrating on development of two military engines, a ram jet and a turbojet.

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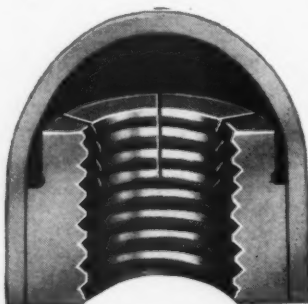
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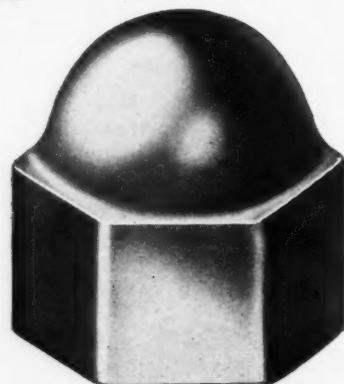
The ALL METAL "Nutt-Shel" Corner Type Self-Locking Anchor Nut was designed for applications where the Two-lug or Single-lug units could not be used.

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Sectional View of "Nutt-Shel" ALL METAL CAP NUT—showing how rigid and secure the "Flexloc" Steel Nut is "pressed fitted" into the shell.

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Red-faced native sons are looking the other way while preparations begin for installation of "FIDO" facilities—for fog dispersal—at Los Angeles Municipal Airport.

The bitter pill, of course, was lightly sugarcoated by the official announcement that the Air Transport Association had selected L. A. after considering "its ideal location, its present and potential traffic volume, and its importance as an international air terminal," further pointing out that this would be the world's first commercial application of FIDO.

Costing \$525,000, the FIDO equipment will mean scheduled landings regardless of weather—a factor of particular importance to the volume of overseas air traffic expected to land here. When the rich California climate condenses to the zero-zero point, the burners will be lighted to clear away (pardon us) the fog, at a cost of some \$75 per landing. Half the cost of installation will be borne by CAA, with Los Angeles paying the balance, to be reimbursed over five years by the five major airlines now using the terminal.

Local embarrassment is offset somewhat by satisfaction over the Chamber of Commerce's coup in launching a new air highway to be known as "Skyway No. 1." Despite anguished howls from the direction of Florida when outraged citizens learned that Californians had stolen a march on them, CAA officials blandly disclaimed any official connivance in the "plot," laying it to superior California enterprise. They added a broad hint in officially announcing their delight that Floridians, too, were interested in marking an aerial highway "from Washington — or any other place—to the land of sunshine."

In the latter sentiment, aircraft industry men agree heartily, for the Washington-California airway will mean installation of some 5,000 of the markers so urgently needed on the nation's air lanes before private flying can progress beyond the present hedgehopping stage.

Burbank Construction Program

One of the principal aircraft communities of this area is undergoing civic growing pains as it finds present power sources inadequate to its new industrial needs. Burbank, home of Lockheed and a number of other aviation enterprises, has just committed itself to a five-year construction program which includes a 25,000,000-gallon storage reservoir, a \$2,000,000 steam generating plant, and other power facilities. Burbank presently sells 14,000,000 kwh. of electricity a month, compared with 1,000,000 kwh. in 1935, before the aircraft industry started to mushroom.

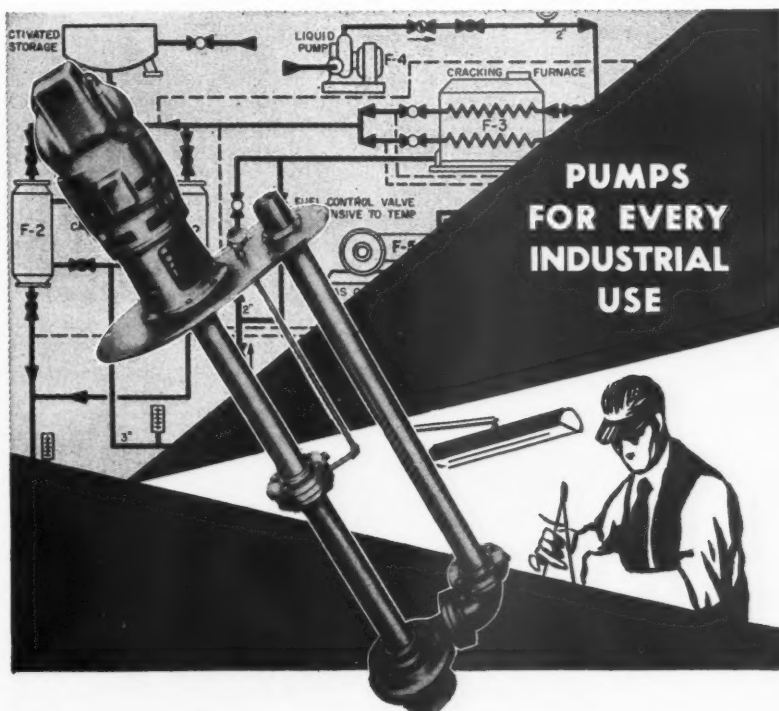
Similar problems continue to confront various areas in Arizona, where water means power, power means water, and both mean irrigation as well as industry.

Several years of drouth have drawn heavily on nature's underground reserves, as well as the extensive irrigation and power storage projects made by man. Experts estimate that 25 to 30 per cent of Arizona's irrigated acreage may be forced out of production by the end of this year. That is why the state is seeking federal funds to obtain Colorado River water already apportioned to it.

The Valley National Bank of Phoenix points out that while some sections have experienced little or no population growth during the past 25 years, the areas where new irrigation development has taken

place have doubled, trebled, or quadrupled in population during the same period. Five counties where the bulk of such development has occurred now can claim 80 per cent of the state's non-Indian population. Set so far, only 1 per cent of Arizona's land has been placed under irrigation.

More than 80 per cent of the state's land, it might be added, is controlled by the federal government through national forests, Indian reservations, and various permanent Army airfields and bases. The latter are expected to play a part in sustaining Arizona employment at high levels.



Behind the scenes in every industrial plant, pumps of all kinds play a very major role in the overall operation. It is extremely important therefore to make sure that the pumps which are used are engineered to give years of unfailing service. Every pump bearing the trademark of Pacific Pumping Company is unconditionally guaranteed. Over forty years of experience in pump engineering is your assurance that when you choose a Pacific Pumping Company pump you will receive a pump that is correctly engineered for the job that it is designed to do. We invite you to talk your pumping requirements over with our pumping engineers.



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West's Chemical Industry Heading For Big Times

SAN FRANCISCO — Chemistry is about to have its day in court, and the Pacific Industrial Conferences which are a part of the Pacific Chemical Exposition in San Francisco October 21-25 are expected to be of considerable significance in making chemistry better known to industry, and industry to chemistry. The exposition is the first of its kind ever to be held on the Coast.

A great deal of wartime and postwar Western chemical development has taken place that has not attracted too much notice outside of its own field, but which is to a large degree as significant as the metal fabrication progress for which the West has gained a wide name. At the same time, chemists have not recognized to full extent just how much general industrialization has gone on.

For a lead-off, an all-day session of the Western Chemical Market Research Group will elucidate the chemical consuming potentials of the Western paint, varnish, plastics, wood, pulp, paper, petroleum and

REGIONAL REVIEW Sierras to the Sea

food industries and agriculture. But on the other hand, it may be equally interesting to find where these industries stand as producers of chemicals. In the case of the oil companies, the chemical tail is already coming alarmingly close to wagging the petroleum dog.

The speakers on these topics include: paint and varnish, Merrill W. Reece, Pacific Coast vice-president, Reichhold Chemicals, Inc.; plastics, Arthur J. Norton, consulting chemist, Seattle; wood, Clark C. Heritage, technical director, Weyerhaeuser Timber Company; petroleum, Elmer H. Weaver, manager of purchases, Union Oil Company, Theodore L. Swenson, Stanford Research Institute.

Some hopes are being held out for future natural gas supplies for northern Cal-

ifornia from the Church Buttes field, near Granger, Wyoming, where the Mountain Fuel Supply Co. of Utah has been drilling. Indications are that there is a large gas field in that area, but whether enough to justify the building of an 800-mile pipeline to connect up with the Pacific Gas & Electric Co. system remains to be seen.

Meanwhile the California Manufacturers Association has been endeavoring to put the heat on the gas companies to get better protection for industry on immediate supply. At two hearings last month before the California Public Utilities Commission CMA put on a long series of witnesses to tell how dependent industry is on adequate and cheap gas. In October the utility companies will tell their side of the story.

Interchange with the two gas companies in southern California when the latter hook-up with the new pipeline from western Texas will help out the northern California situation somewhat. A further help will be the second pipeline from Texas

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Start a drive today for larger participation in the plan. Many employees may be unfamiliar with its advantages. If you want literature for distribution, contact your State Director of the Treasury Department's Savings Bonds Division.

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The Treasury Department acknowledges with appreciation the publication of this message by

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for which El Paso Natural Gas Co. has filed an application with the Federal Power Commission for authority to construct and finance.

Three manufacturers in the San Francisco Bay area have been having electric power supply troubles also. Dow Chemical, Shell Chemical and Hercules Powder were cut back to one-third of normal in August because they were on "dump" power contracts and so had to be the ones to suffer when there was not enough electricity to go around, due to the hydro-electric shortage.

This cut down the chlorine supply and created sanitation problems in various

parts of the state, but Pacific Gas & Electric subsequently upped delivery of power to 50 per cent of their normal requirements until October 31. The increase will permit manufacture of enough chlorine to keep the Los Angeles beaches open the rest of the season and permit increased production of chemical fertilizers. By next season new generating plants will be in use which will be insurance against a repetition of the situation.

The problem of where to put the next bridge across San Francisco Bay grows more confused all the time. First the State Highway Department plunked for a parallel bridge to the present Bay Bridge. Then

the joint Army-Navy board which must approve any structure recommended the so-called "southern crossing," from Alameda on the east side of the bay to Army Street in San Francisco.

Following that the San Francisco Bay Area Council brought in a majority report in favor of the parallel bridge, a minority report supporting the southern crossing, which would be a combination bridge and tube. The San Francisco Chamber of Commerce has swung in behind the southern crossing advocates.

But the San Francisco Bay Area Council also proposes that studies for a southern crossing be instituted as soon as the parallel bridge is completed (provided, of course, that this is the course of events), and that a concurrent study be started for the construction of still another bridge connecting Contra Costa and Marin counties in the approximate location now being served by the Richmond-San Rafael ferries.

The general argument in favor of the parallel bridge is that it will afford the most relief to the crowding of the present bridge, and bring people to the points they most want to reach on both sides of the bay; also, that a southern crossing would only divert 25 per cent of the traffic at most. The Bay Area Council wants freeways completed on both sides of the way to take care of traffic.

Proponents of the southern crossing say the parallel bridge will simply dump more traffic into already overcrowded downtown San Francisco streets, and that the southern crossing will build up both the southern end of San Francisco and of southern Alameda county.

Much remains to be done in working out an adequate plan for mass transportation as a means of relieving the traffic pressure, for patronage of the Key Route electric trains across the bay has been steadily declining for a long time. The Key Route has been considering taking off the trains altogether and replacing them with bus transportation, but this idea has not inspired great enthusiasm with the commuting public.

Chairman Randall Dickey of the interim committee of the California legislature investigating the stream pollution problem reports that three investigators have been canvassing the northern California area to ascertain the conditions and needs, and that a two-day hearing will be held in Los Angeles in October to ascertain the facts concerning the Los Angeles basin.

The various industries have each appointed representatives to form a board which will develop their story and present it through a single representative for all. The interim committee's idea is to get the viewpoints of all the interests involved regarding sanitation, recreation, industrial and commercial development and then revise the present laws to take care of the needs of the present situation.

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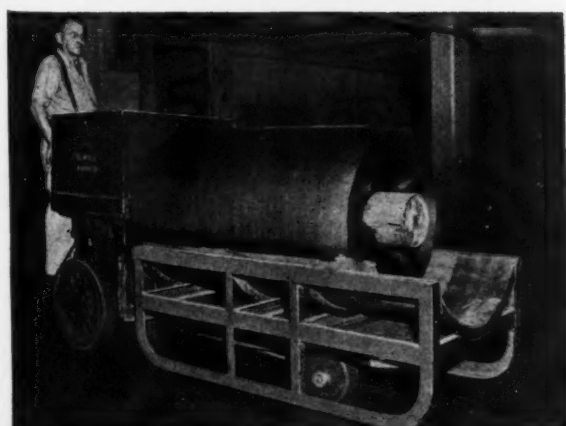
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Rain-Making With Dry Ice May Be Break for Inland Area

As well as supplying much needed water, man-made rain may also foster a giant industry in CO₂ within a matter of months

DENVER—For more than 100 years the eastern slope of the Rockies and the great plains area have been trying to live down the bad name given them by an army officer who glibly branded the whole area, "The Great American Desert."

Resourceful Americans, not easily scared off, turned the region into one of the world's most productive areas by means of irrigation, control of erosion, development of grains and grasses suited to a semi-arid climate. But sometimes the lack of rainfall proved to be almost too much of a handicap. True, other sections of the earth have their drouths, including the usually-lush corn belt of the Mississippi valley. But somehow it seemed that those towering Rocky Mountains, like the Sierras and coastal ranges farther west, just wouldn't let the inland areas along the eastern slope

REGIONAL REVIEW The Continental Divide

of the Rockies and the prairies have enough moisture to insure their survival.

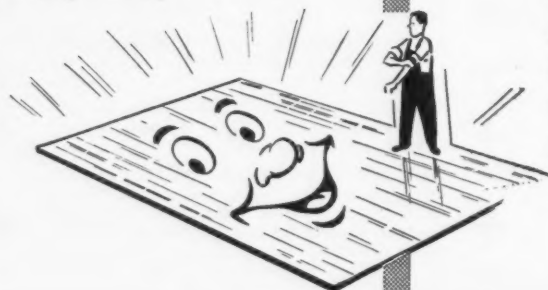
Now the Rain Makers are moving out of the realm of witchcraft into everyday technology. All over the region barnstorming aviators with a load of pulverized CO₂ are sprinkling their magical potion on likely-looking cumulus clouds and down falls rain in wonderful, life-saving amounts. A lot of kidding goes with such rain making, but there is a growing realization that this may be the big break the too-dry inland area has always needed.

The rain-filled clouds always were there, but too often drifted on to some other

place before dropping their watery load. Now man can pull rain out of the skies at will. If that is true, as it is proving to be every day now, a very basic change may be in store for inland America. An interesting sidelight on the business of rain making with carbonic gas in frozen particles is the possible effect on the CO₂ industry itself. New Mexico, Colorado and various other states of the region have never found too good a market for the gas wells that put out almost straight CO₂. But the area during the past summer experienced an acute shortage of the steaming white chunks that volatilize from a solid to a gas without even going through the liquid state.

To meet the demand, the Stapp Engineering Company of Denver's picturesque old Tabor building is building an 18-ton daily capacity CO₂ plant at Springer, New

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And before we sign off, here are two other Pacific floor cleaners that have a big following—SUDSOIL, an efficient vegetable oil scrubbing soap especially suitable for linoleum, asphalt tile, rubber tile, wood and concrete floors and walls; CHLOROSOL, a totally soluble chlorine sterilizing agent for use in water dilution.

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Mexico, and one of the same size in Denver. Both plants can readily be expanded to 100-ton daily capacity, if the demand skyrockets as some authorities anticipate. Here is a baby industry that may show earmarks of giantism within a matter of months.

Hydro-Carbon Reserves

Another bullish factor being considered these days up and down the Continental Divide is the pleasant glow the people feel when they realize the rest of the country rapidly is acknowledging the enormous importance of the hydrocarbon reserve in this portion of the land. The current shortage of petroleum products in the midwest district, particularly around Chicago, not only has stimulated the search for new oil fields in the Rocky Mountain region—admittedly the last likely place for important new reserves to be discovered—but that same concern over fuel supplies has focused attention on the Rocky Mountain region for long-range hydrocarbon reserves.

With one-third of the nation's bituminous coal supply and practically all of the lignite, not to mention virtually all of the oil shale and gilsonite, the region can consider itself the nation's fuel bin from just about now on in. Moreover, with the

world's two greatest gas fields (Hugoton and Amarillo) in the high plains country near the strip where Texas, Oklahoma, Kansas, and Colorado almost join, the region sees even earlier promise of a technological revolution as the vast reserves of natural gas are processed to make gasoline and other fuels usually derived from petroleum, plus a wide range of chemical raw materials from which today's industrial magicians can make virtually anything by using Fischer-Tropsch, Bergius and similar processes. Such a region can't help having an industrial future that staggers the imagination.

While the big industrialists hump to keep things moving at their steel mills, cement plants, packing houses, mines, smelters and refineries, there seems to be an increasing tempo to the emergence of important new smaller plants. Much of this is due to the de-centralization movement away from the big cities of the east, the midwest and the Pacific Coast. Nothing new, perhaps, but one of the significant economic shifts of our time, which will be evidenced in the life of the people for many years to come.

However, much of the growing interest in manufacturing in the mountain and prairie states comes from the simple logic of the situation the people face. Why not make finished goods when the raw mate-

rials and the labor and the power are right here in abundance? The old hogwash about freight rates being prohibitive isn't fooling anybody any longer. Too many manufacturers in too many lines have proved that they can set up shop in the mountain states, turn out their products and sell them locally, regionally, nationally or in foreign trade. Instead of going broke and into bankruptcy, the manufacturers build palatial mountain homes from which they can commute to their factories, spend part of the year in Hawaii or some other out-of-this-world playground, and otherwise seem to live very well.

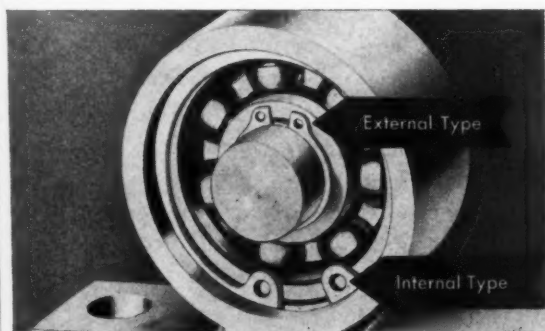
There seems to be no particular type of product that cannot be made in the mountain states. Stearns-Rogers of Denver is building a \$7,500,000 gasoline and propane extraction plant for the Houston, Texas, area, and that is just a sample of the refining, smelting, mining, sugar processing and other machinery turned out in the Colorado capital city.

Up in nearby Idaho Springs, popular resort both winter and summer, a young couple are manufacturing 200 coin-operated radio sets a month, for use in hotels, motels and such—why in Idaho Springs? Why not? It is a nice place to live.

Denver gets another battery factory, another million-dollar livestock packing

(Continued on page 70)

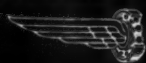
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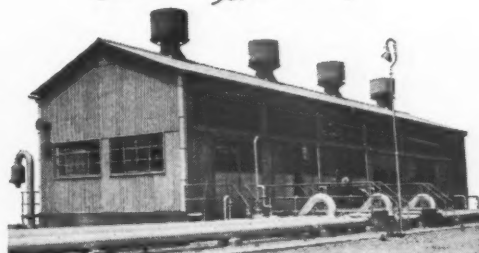
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Rain Making With Dry Ice

(Continued from page 69)

plant, and the world-wide business of the Eastman Oil Well Survey Company gets a big boost as H. John Eastman buys a couple of Pacific Coast oil field equipment and service firms to add to his far-flung and profitable string of operations.

In Denver's pretty and bustling suburb, Littleton, the 400 employees of the Heckethorn Manufacturing Company are turning out a great variety of products including many in the gadget class, not to mention 500,000 bronze victory medals for Uncle Sam's wartime heroes. Why in Littleton? Why not—it's a nice place to live.

Wool Testing Plant

One of the busy spots in the Denver area is a plant unlike anything else in the country, except for one in Washington, D. C. Here 23 employees directed by Henry Keller of the U. S. Department of Agriculture are testing sheep's wool in a 9,000 sq. ft. laboratory that once was part of the Denver Ordnance Plant. The Denver plant serves the 12 Western states which produce 70 per cent of the nation's wool. Testing wool "in the grease" involves many processes and some fine calculations to determine the exact amount of grease in each wool "core."

Another kind of a plant to do some-

thing about the region's wool may emerge from plans now being developed in Colorado by an official industrial and economic expansion committee headed by enterprising Dr. Robert L. Stearns, president of the University of Colorado. The need for a wool processing industry is rated the No. 1 problem of the committee, and Gov. W. Lee Knous made it clear when he appointed Stearns and a distinguished group of citizens to the committee that action on the wool problem had better be forthcoming pronto. Knous said, "We've done enough talking about this situation. Now is the time for action."

Denver shuddered a few weeks ago, realizing that it had missed disaster by too close a margin for comfort. A fire at the Rocky Mountain Arsenal on the north-eastern edge of the city had been brought under control with difficulty, while firemen sweated and slaved to keep the fire away from huge tanks of poisonous chlorine gas, which were being seared by the flames. During the war the Denver arsenal produced great quantities of poisonous gases that never were used, much of which now is being diverted to more civilized purposes. The fire could have turned into a major disaster for one of the safest cities in the whole, wide world.

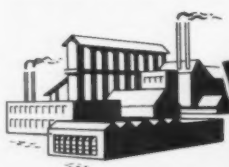
Caverns for New Mexico

Not since the days when something mysterious named Pasco was being built on the upper Columbia River has there been such a shush-shush project as the huge caverns the army is digging in the Sandia mountains near Albuquerque, New Mexico.

Presumably the underground facilities are assembly plants for the manufacture of atomic bombs, but they might be any sort of factory designed to be beyond the reach of possible bombing attacks. Various government authorities have stressed the importance of programs to develop underground "factories" that can be used in the event of an atomic war. With New Mexico already in the world spotlight because of its Los Alamos atomic research center and the White Sands proving ground for the V-2 rockets and guided missile tests, it seems that the Sunshine State may be acquiring an important new industry.

The Denver Post recently reported: "Great excavations are underway beneath a mountain peak. Hundreds and reputedly thousands of men are at work there with ponderous machinery. Civilian pilots say that planes of the most modern war types, from jet pursuits to extra-long-range bombers, are standing near runways a short distance from the construction center. . . . There's also word about a 30-acre

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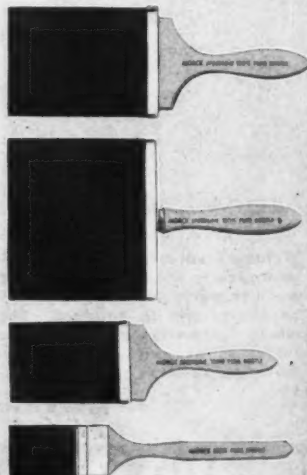
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subterranean research laboratory, of conveyor belts running out of the bowels of the earth to deliver atomic bombs to the surface. Obviously millions have been spent already on the vast project, and many millions more will go into it before it is completed. . . . This section of the Rocky Mountain Empire is becoming the center of the nation's and history's most crucial scientific efforts in fields electronic, supersonic and atomic."

Washington Slant on Kaiser

(Continued from page 54)

called a press conference at the Statler Hotel. He appeared there with his sons and his lieutenants and with bountiful supplies of "releases."

He painted an enthusiastic picture of what horrors will happen to the nation's economy if there is no swift increase in the productive capacity of the steel plants, especially on the West Coast.

He apparently regards his Messiah-like position in the Western steel picture as a leadership which will insure the salvation of our Democracy. And quite incidentally and nonchalantly he dropped the word that he is engaged in negotiating for two more steel plants, chiefly to insure supplies for his own automobile and allied industries.

It may interest you to learn that on the Hill, and elsewhere in official Washington, in high quarters and in low quarters, they denominate Kaiser as a "high-cost operator." They apparently fear that when he manages to clear an obligation, such as is imposed on Fontana, he will promptly take the property and hock it to secure funds to launch another entirely different and new enterprise; in other words, that he will irrepressibly break out in an entirely new direction and precipitate new problems.

And true to his nature, Kaiser apparently thinks that if you are not positively and absolutely with him, you are against him. He seems to see only black and white. At the conference he astounded some of us by saying that he had not been able to get any answers from Senator Wherry and Senator Martin, and others, whom he had summoned to support him in his radio broadcasts as well as by personal wires.

It astonished us still more to hear him say that he had no assurance of the support of his Fontana program from the Los Angeles Chamber of Commerce and Western States Council; and he bore down on the statement that the Western States Council had not been able to reach the President with his troubles. Obviously, his public question of the attitude of these organizations was amazing in the light of their effort in July at the dinner in the Capitol to further his cause. It is this aspect of the Kaiser psychology which makes him a difficult problem in public affairs.

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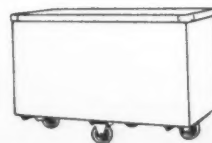
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Trade Meeting Spotlights Potential Alaska Industry

Lumbering and pulp industries, further developments in fishing mentioned as early possibilities, but transportation undependable

PACIFIC NORTHWEST. — About half of the two-day August meeting of the Pacific Northwest Trade Association was devoted to a discussion of the problems of Alaskan development. This is a fair indication of the increasing awareness of Alaskan potentialities and restrictions among business interests of the Northwest, particularly in western Washington and Oregon.

Speaking for Alaska, George Sundborg, general manager of the Alaska Development Board, countered many of the criticisms of the territory made by Rear Admiral Frederick Zeusler, U.S.C.G., Ret., and pointed out a few of the industrial developments which are currently taking place, as well as the principal future developments. The main point seemed to be that Alaska will never be fully self sufficient; that its production list will always

REGIONAL REVIEW The Pacific Northwest

be limited and that other products will always have to be imported.

While the fishing industry in Alaska appears to be fairly well established, there are new areas that could be developed, particularly in the Bering Sea. Progress along this line is indicated by the recent return from the Bering Sea to Bellingham, Wash., by the processing ship "Deep Sea" owned and operated by Deep Sea Trawlers, Inc., of Seattle. On her maiden voyage the vessel caught, processed, and/or froze, 30,000 pounds of cooked crab, 9,000 pounds of crab claws in the shell, 8,000 pounds of crab, sole, salmon, and other

fish filleted and frozen, and 12,000 pounds of cooked whole King crabs.

Another possibility of further development mentioned by Sundborg was that of oil extraction from waste of the salmon canning operation. Further explanation of this possibility was made when the Department of Commerce announced that it would grant the Alaska fisheries experimental commission \$47,000 to develop market possibilities for 120,000,000 pounds of salmon waste discarded annually by the fish catching and packing industry in the territory.

About 30 per cent of the 360,000,000 pounds annual salmon catch is either dumped in the ocean or allowed to rot at the canneries. Waste includes head, collar, tail piece, liver, milt, roe, and other discard. By processing into pharmaceuticals such as vitamins, hormones, and animo

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acids, and chemicals such as drying oils and resins, it is felt that the wastes may be converted into a year-round industry turning out a product valued at as much as \$10 million annually.

SEATTLE—Population of the metropolitan area of this city has increased 33 per cent since 1940, according to an April estimate of the Bureau of the Census. . . . Northwest Airlines became the first commercial air transport firm to occupy the new Seattle-Tacoma airport at Bow Lake midway between the two Puget Sound cities. Northwest moved into a new \$1,200,000 hangar on Sept. 1. United Air Lines may delay as much as two years its move from the crowded Boeing Field to the new port because of high building costs. . . . Boeing Aircraft Co. sponsored a three-day symposium on high altitude flight as a means of exchanging information and experience on the design and operation of high-altitude, pressurized aircraft. The meeting on Aug. 25-27 was attended by aircraft engineers of air lines, air craft manufacturers, and armed forces representatives.

Exploitation of the commercial timber in the territory is dependent upon the establishment of pulp mills principally because Alaskan forests are mixed with small and knotty trees suitable only for pulp intermingled with the commercial timber. Clear cutting will permit use of the saw timber and peelers. The opening of the pulp industry in Alaska appears to be not too far in the future, and there are many hopes that it will go a long way toward stabilizing another economic factor of Alaska development, that of transportation.

All parties to the dispute agree that basic transportation between Alaska and the northwest states must be waterborne, but there all agreement ceases. Since government control of Alaska shipping ended, bulk transportation has been undependable and about nothing else. Blame for existing conditions is passed around the circle from the public to the ship operators to the maritime unions to the fishermen and canners, and so on ad infinitum.

However, one solid fact seems to be that transportation is largely a one-way proposition during eleven-twelfths of any year. Freight consists of supplies going to Alaska, items required by the residents plus cannery supplies, plus a large quantity of construction material at the present time, with outgoing cargo pretty much confined to the salmon pack which comes out in one month at the end of the fishing season. It is felt that a year-round industry like pulp manufacturing will be of material assistance in correcting the one-way transportation, even though the mills will be located only in the southeastern corner of the territory.

Definite word that development of a pulp and paper industry would be per-

(Continued on page 74)

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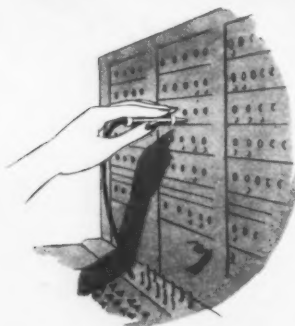
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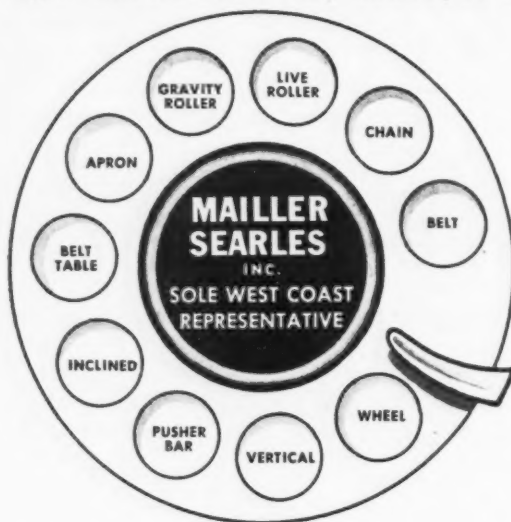
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(Continued from page 73)

mitted to take place in Alaska came during August following the signature by the President of a bill permitting the sale of timber in Tongass National Forest. The Forest Service announced that oral bids will be heard in Washington, D.C., on Oct. 1, for the purchase of the first 8 billion board-feet block of 80 billion to be sold.

Bidders in addition to being screened for knowledge of timber, water power, and other operating conditions, will be required to show evidence of possessing \$8,000,000 for plant construction. The Forest Service estimates that a total investment of between \$30,000,000 and \$40,000,000 will be required to establish the pulp mill together with a workers' community and including electrical generating facilities to provide all power required for the manufacturing and for the community. Contracts will run for 50 years, and will provide for prohibition against stream and tide water pollution and for logging on a sustained yield basis.

Frank Heintsleman, Alaska regional forester, speaking in Seattle late in August, forecast the early establishment of two 500-ton pulp mills in the territory. Five

TACOMA—St. Regis Paper Co. will definitely construct a \$6,000,000 kraft paper mill and paper bag plant here adjacent to its existing pulp mill. The proposed plant will have a capacity of 280 tons of bleached and unbleached kraft paper per day. The multi-wall bag plant will be capable of turning out 200 million bags per year for various package purposes. . . . Washington Cooperative Farmers' Association has begun the construction of a \$500,000 feed mill in the industrial section. Design and construction of the mill is being done by Jones-Hettelsater Construction Co. of Kansas City.

companies have indicated that they have definite plans to construct mills in the territory, and two of these companies are ready to proceed with their plans. One company expects to build a mill on Thomas Bay near Petersburg, and the other near Ketchikan.

A little closer to home, the Weyerhaeuser Timber Co. broke out another new announcement on its utilization of wood wastes program. This development is to be a sulphate mill to be built in connection with the new Weyerhaeuser sawmill under construction at Springfield just east of Eugene, Ore., which is considered to be pretty close to the center of the lumber industry in the Northwest at the present time.

The sulphate mill at Springfield will utilize slabs, edgings, and trimmings from the sawmill, and undersized trees, chunks and tops from the logging operation which supplies the sawmill. In a formal statement, J. P. Weyerhaeuser, Jr., president of the company, said: "The sulphate mill unit

is another step in the company's long-range planned program of integrated wood utilization being worked out at its various manufacturing plants."

PORTLAND—Fibreboard Products has awarded a \$400,000 contract to L. H. Hoffman for construction of its new 200 by 600-foot plant. . . . Swan Island shipyard facilities will probably be opened to short term leases by War Assets Administration since no agreement has been reached with the Port of Portland, owner of the land, and the government's lease will terminate in 1952. . . . Population of the metropolitan area of the city has increased 31 per cent, according to an April estimate of the Bureau of the Census. . . . Pacific Telephone & Telegraph will erect a \$4,000,000 building here next year to house the local equipment required for the nation-wide toll dialing system.

Present plans call for a plant employing 175 persons and capable of producing about 150 tons of finished material per 24-hour day. The plant will produce two types of container board, a liner type and a corrugated type, using one large paper machine. Plant designs will include provisions for effluent treatment to avoid stream pollution. Cooking liquor will be run through a recovery process to reclaim chemicals and utilize available heat.

The Weyerhaeuser sulphate mill will be the second of its kind for Oregon, one being in operation at St. Helens on the lower Columbia. It will be the second for Weyerhaeuser also, the first presently being constructed at the Longview, Wash., mill. Weyerhaeuser has operated a sulphate plant at Longview since 1937, and another at Everett, Wash., since 1936.

Another branch of the timber products industry, door manufacturers, are experiencing continued heavy demand with no apparent prospect of slackening. Ten producers of fir doors in the Northwest who supply two-thirds of the stock house doors used in the United States reached a monthly production of 600,000 units in June, and expect to produce a total of about 7 million doors during 1947.

Improved supply of higher grade lumber from which door stiles and rails are cut has made possible the best production record in three or four years, but further increases will be dependent on availability of other materials with plywood, used for door panels, probably the governing factor. Distributors and retail lumber dealers have been unable to build up stocks since the war, which will account for considerable demand after the present backlog from last year's housing construction program has been filled.

Shingle production is also at a peak in the Northwest with many small mills that had closed down during the war back in operation again. Increased activity in log-

(Continued on page 76)



but he Wasted Time Today...

Joe has just finished a fair day's work, and he's mighty tired—but it's a fact that he wasted time today. He stayed right on the job—no loafing for him—yet the time he spent lifting and lugging heavy materials and getting heavy work into his machine and out again was not productive time. There are many Joes in industry today, but their numbers are decreasing constantly, mainly because plant engineers are learning that continuous flow handling methods eliminate this inefficiency, and are applying these methods. A smooth, controlled flow of materials to machines goes a long way toward increasing production and keeping worker fatigue at a minimum. Mathews Engineers are specialists in continuous flow handling methods, and make available to American and Canadian industry the facilities of three modern strategically located plants, and the benefit of many years of experience in dealing with conveying problems in both light and heavy industry.



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(Continued from page 75)

ging has resulted in a considerably improved supply of cedar logs, and many mills are working a six-day week paying overtime for Saturday. During the first five months of 1947 shingle production in Washington and Oregon was 1,498,600 squares, an increase of 21 per cent over the first five months of last year.

Turning from timber and timber products to metals, there was some news during August of new metals that may become increasingly valuable to the Northwest. At Albany, Ore., S. M. Shelton, chief of the metallurgical branch of the Bureau of Mines, Albany laboratory, announced that the zirconium production project would be continued in spite of budget reductions.

The project requires the establishment of a pilot plant, and is aimed at producing zirconium at a cost of about \$5 per pound instead of the present \$500. The raw material to be processed is the black sand of southwestern Oregon beaches. During the war a plant was set up to extract chrome from these sands, but the project did not prove to be too successful from a cost standpoint, and War Assets Administration eventually sold the plant to a cooperative dairy.

Another black sand is being investigated in Idaho. Several gold dredging organiza-

tions operating northeast of Boise discovered that their tailings included a quantity of monazite which contains about 6 per cent thorium, a radioactive metal found in compounds similar to zirconium. Both companies are presently stockpiling the black sand, and one has undertaken some research to determine whether the monazite can be processed for commercial use.

SPOKANE — Permanente Metals Corp. has established the first Northwest technical laboratory devoted exclusively to aluminum fabricated products. Situated at the Trentwood mill and under the direction of Paul Zeigler, the new laboratory will undertake a wide variety of technical projects related to both the production and end uses of aluminum. . . . Population of the city is estimated at 151,400, an increase of about 24 per cent over 1940. The estimate was made by city officials at the request of the state census board.

Peacetime development of the magnesium industry appears to be more remote than it did nine months ago. Although some research on magnesium continues, there seems to be little chance that the reduction plant at Spokane will be placed in operation in the near future. The Albany

laboratory of the Bureau of Mines is operating a pilot plant for the production of electro-thermic magnesium, and the industrial research division of the institute of technology at Washington State College has persuaded an eastern sporting goods manufacturer to test a magnesium baseball bat.

The big drawback to operation of the magnesium reduction plant, however, appears to be the lack of large blocks of power required in the process. The War Assets Administration has been quoted lately as abandoning all attempts to dispose of the plant until more power is available. How long it will be until sufficient power will be available to operate the magnesium plant is an almost unanswerable question at the present time.

It is generally conceded that Permanente would have some difficulty in getting power to operate the sixth potline at the Mead aluminum reduction plant, if the corporation were minded to increase its production of aluminum pig. Even with a new generator at Grand Coulee scheduled to come on the line late this year, there will be no large blocks of power available for heavy industrial users.

Figures for total electrical energy generation in three of the Northwest states—Idaho, Washington, and Oregon—show

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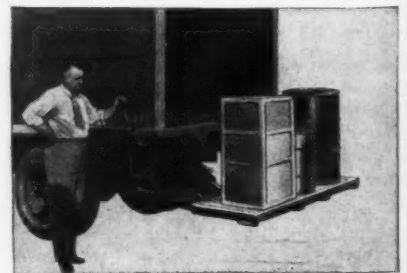
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for the month of May this year an increase of 33 per cent over the same month last year, very nearly twice the national average increase for the same period. With oil prices in the Northwest higher than ever before, and a threatened oil shortage next winter the need for additional hydro-electric generating facilities becomes readily apparent.

The past summer saw very little decrease in the energy demand in Northwest states, and most of the steam generation plants were kept in operation. Even so, the May figures indicate that less than 4½ per cent of electrical energy was generated by steam.

Idaho Power Co., which has been planning a new hydro plant on the middle Snake River to meet heavy demands in western Idaho and eastern Oregon, finally suspended plans for the Oxbow dam in the face of political difficulties in Oregon, and proposals by the Corps of Engineers to build a federally financed power generating structure whose reservoir would flood out the proposed Oxbow plant. In its place the Idaho company announced plans for a 100,000-kilowatt plant to be built on the upper Snake near Bliss, Idaho.

In the face of the power shortage residents of northeast Oregon and southeast Washington have formed a campaign committee dedicated to securing location of the rumored \$500,000,000 supersonic air research center for Boardman, Ore., 190 miles up the Columbia River from Portland. Such unofficial statements as have been made concerning the research center indicate that it will require about 500,000 kilowatts of power, which would be slightly more than the capacity ultimately to be provided at McNary dam on which preliminary construction has been started about 45 miles upstream from Boardman.

Other requirements of the center are said to be large quantities of cold water and a relatively large uninhabited area, both of which could be supplied by almost any location on the Columbia between Grand Coulee and The Dalles. Report from Washington early in August said that a definite decision on the location might be reached during the month of September.

Another item on the power front was the final refusal by the Washington state supreme court to permit the Skagit County Public Utility District No. 1 to purchase properties of the Puget Sound Power & Light Co., which serves much of the western half of the state. Proponents of the purchase are now considering the establishment of a non-profit corporation to act as agent by purchasing the system as a whole and reselling it piecemeal to the 15 public utility districts within which PSP&L operates.

A NEW FORMULA FOR FASTER HANDLING MAKES SHIPPING HISTORY

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The conveyor system at the McMahan & Leib Warehouse, Anderson, Indiana, stretches out into the warehouse in such a manner that it can be used for making up orders from any point in the warehouse and for delivering them to the shipping dock. But that's not all . . . the same equipment is also used for unloading materials from both railroad cars and trucks and for carrying this material through any of three doors to storage points on the second floor.

LOADS TRUCKS IN HALF THE TIME

All orders are now made up and loaded on the trucks by 11:00 A.M. This enables McMahan & Leib to



(B) Floor-Veyor carries packages to second floor storage

give their customers better service and leaves the afternoon free for unloading incoming goods.

ELIMINATES OVERTIME AND DEMURRAGE

Before this installation it was frequently necessary to work many hours of overtime to get the big semi-trailers and railroad cars unloaded.



(D) Rapid-Wheel Conveyor and chute complete the conveyor circle

Now they can handle the unloading of a car or truck in such a short



(A) Stevedore, Jr. gives the packages a boost

time that they haven't had a single case of demurrage or overtime to pay.

HOW IT WORKS

One man in the truck or car places the packages on a Rapid-Wheel Conveyor where they flow by gravity into the receiving room. A Steve-



(C) Rapid-Wheel Conveyor operates by free force of gravity

dore, Jr. power belt conveyor (A) gives them a boost to another wheel conveyor where they flow by gravity to a Floor-Veyor (B). The Floor-Veyor carries the packages to the second floor where they again travel by gravity to all points in the warehouse. One man in the warehouse stacks the cartons, removing them from the conveyor at the point closest to the piles (C). For filling orders, goods can be placed on the conveyor at any point in the warehouse and carried back to the shipping room through a chute (D).

For further information on these time, labor and cost saving conveyors, write the Rapids-Standard Co., Inc., 374 Peoples National Bank Bldg., Grand Rapids 2, Michigan.

Coking Process Offers New Use For Western Bituminous

SALT LAKE CITY.—A process for converting non-coking, bituminous coal into readily coking briquettes has been worked out at the Utah Engineering Experiment Station at the University of Utah. James Hugh Hamilton, director of the station, is hopeful that the reconstituted coal will greatly increase the industrial usefulness of the immense bituminous deposits in Utah, Wyoming and Colorado and convert the relative scarce supply of coking coal in western United States into an abundance.

The coke briquettes have satisfactorily passed laboratory tests but have not yet been tested in blast furnaces.

The researchers themselves do not know precisely why the non-coking coal, when reconstituted, becomes a coking coal. The process involves fine grinding greatly to increase its density and addition of a binder, such as pitch. But the grinding and increased density is the basic part of the

REGIONAL REVIEW The Wasatch Front

process, as any one of several binders will serve equally well as pitch.

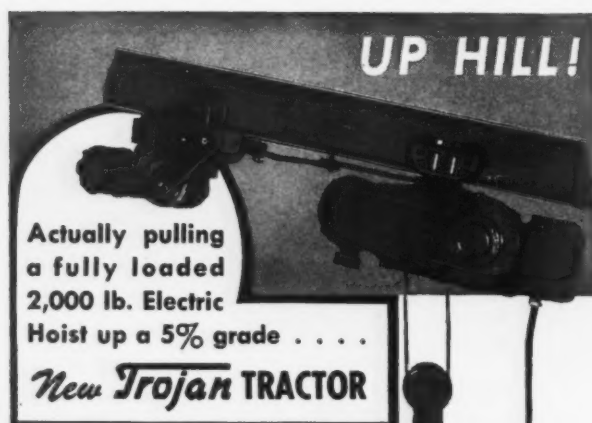
Geneva Steel Co. has succeeded in producing a satisfactory blast furnace coke from Utah coal but they had been working exclusively with coal from the Sunnyside deposits. This is the best coking coal in the area and it was something less than satisfactory until the Geneva company worked out several changes in the conventional coking techniques to improve the quality. The Geneva practices include selective mining, increasing density, addition of pitch and raising oven temperatures.

But the Engineering Experiment Station researchers are in a new experimental field inasmuch as they are using coal which heretofore has been regarded as useless for coking purposes.

A possible application of the process, in addition to producing blast furnace coke, is for the recovery of minerals, such as zinc and phosphate, from deposits which are not now economically feasible to work. This involves the combining of finely granulated mineral-bearing earth with coal to produce a coke briquette and recovery of the mineral through a heat process.

Practical traffic men in the intermountain region are beginning to get disturbed about the political clamor for a general freight rate investigation in the west. They recognize that the idea has considerable public appeal, inasmuch as Westerners have been telling themselves that they are the victims of discriminatory freight rates for so long that most of them believe it. But actually, according to the traffic experts, the West has very favorable commodity rates when they are measured on a mileage basis.

Directors of the Western States Council, at a recent meeting in Salt Lake City, reg-



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istered their alarm by appointing a special transportation committee to investigate the subject and report on the probable effects of a general investigation. The committee knows, without any study, that it is opposed to such an investigation and its first job will be to convince major Western shipping interests that they stand to lose a great deal and gain little by any general freight rate readjustment.

One of the best informed rate men in Utah, who represents shippers and not the carriers, analyzes the picture this way:

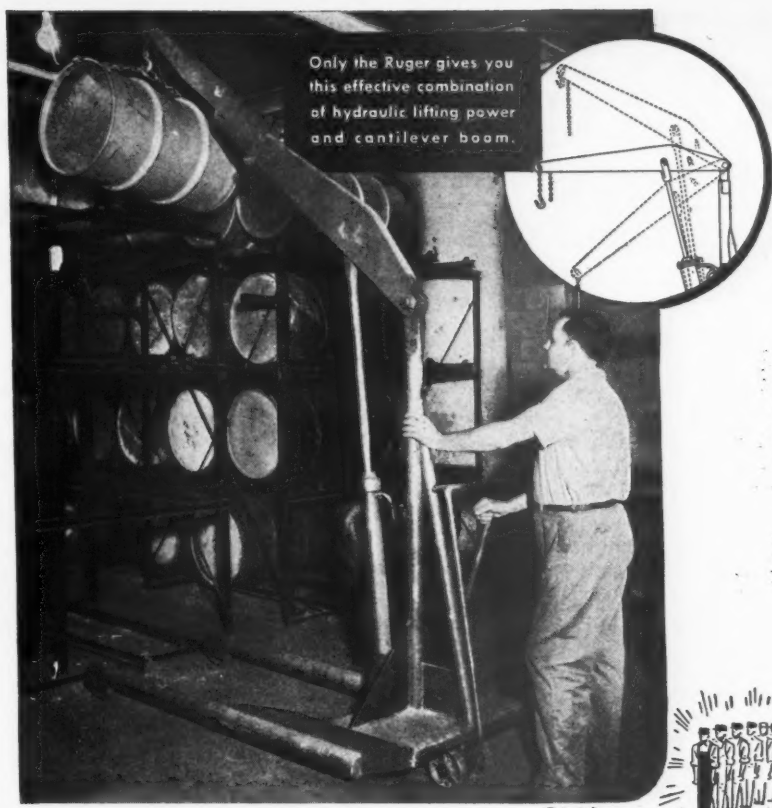
Because the major consuming markets are far removed from the intermountain West, almost all the area's traffic is in the long haul category. And because of the distances, the carriers have granted commodity rates which are low when related to mileage—substantially lower than the shorter haul rates in the East. Without these favorable commodity rates, Idaho potatoes, intermountain cheese and dairy products, Utah eggs and canned goods, and a host of other products could not reach the markets in which they are now being sold.

A general rate investigation, if it accomplished anything, would compel the Interstate Commerce Commission to equalize rates on a mileage basis. This would have the effect of increasing rather than decreasing the long haul commodity rates under which almost all the Western train moves. And while the intermountain territory might get some decreases on a few class rates, under which very little traffic moves, it would be forced into a freight rate straightjacket which would be disastrous to its major industries.

Employment in Utah is still on the increase, according to figures released by the state department of employment security. The July, 1947 total was 216,100 as compared with 214,500 in June and 207,562 in July of last year.

Thermoid Western Co.'s \$2,250,000 plant at Nephi is nearing completion and initial test runs are scheduled for late September. How soon thereafter the units can be put into production will depend in part on how quickly personnel can be obtained and trained. A pre-employment training course is being set up by the state department of vocational education in cooperation with the local school district.

Approximately half of the Utah business and industrial establishments which participated in the veterans' on the job training program have withdrawn for one reason or another. The two chief reasons for dropping the program are (1) trainees' salaries rising above the ceilings, which automatically removes them from the program; and (2), employer irritation from "red tape."



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Anyplace around the plant, wherever you need to pick up, elevate, carry, lower, stack, tier or otherwise maneuver heavy, bulky, awkward loads, one man with a Ruger Floor Crane will do as much work as a labor gang, and do it quicker and cheaper.

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Anyone can operate a Ruger . . . only 2 controls, pump lever to raise boom and load, fine-threaded release valve to control the lowering. Three sizes, 1-ton, 2-ton and 3-ton all mounted on large diameter roller bearing wheels and casters.

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Wanted: Interpretation Of Taft-Hartley Law

THE actual interpretation, and enforcement of the Taft-Hartley act is still a deep, dark mystery to the 28 regional offices of the National Labor Relations Boards. In the San Francisco office they're "just not talking about it." Dates for hearings on hundreds of pending cases have been postponed because no one is certain of just what decisions can be made.

NLRB offices on the West Slope are just as confused and skittish about the exact meanings of the law, as regional offices throughout the country. A few instructions have come through from Washington, but evidently these instructions also need interpretation. Regional heads refuse to discuss the new labor-management act until they "actually know where they stand," as one director put it.

It is expected that there will be quite an increase in personnel, and Congress has made actual appropriations to cover this event. Many regional directors, who believed the law impossible to enforce, have resigned, although this is not true in the San Francisco Bay area.

Most plaintiffs in pending cases have asked for an extension of time, and although unions have been requested to comply with the law, the A F of L has refused point blank to file financial statement and affidavits by their officers that they are not Communists.

At the present time the NLRB offices are quiet and peaceful, but officials expect it is the lull before the storm. Employers in many instances are keeping the peace by negotiating with the unions without

benefit of Taft, Hartley or NLRB. However, if an employee who is discharged, for either employer or union difficulties, should decide that he wants to file charges against either, NLRB will awake with a jolt and the ensuing battle will involve a triangle of union, employer and NLRB. Right now no one knows what the outcome would be.

Industrial Peace Aim Of Taft, Says Lundeberg

Harry Lundeberg, head of the Sailor's Union of the Pacific, whose recent interview with Senator Robert Taft in San Francisco became seemingly a mutual admiration society, declares that Sen. Taft wants only industrial peace. That, in spite of the hullabaloo created by his co-authoring of the so-called Taft-Hartley "slave" act, Sen. Taft believes firmly that indus-

For Contractors and Industry GOODALL "SUBWAY" AIR HOSE



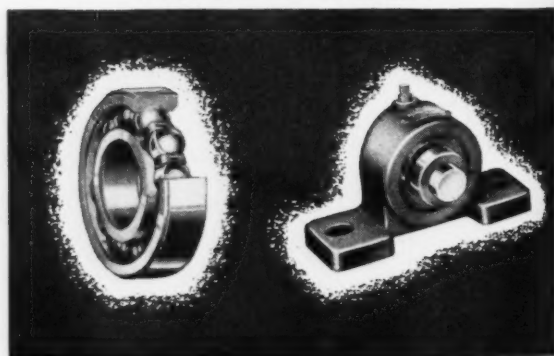
AIR HOSE TAKES A BEATING!—That's why sturdy hose such as Goodall "Subway" with its wrapped duck construction, oil and moisture resistant tube, and tough red jacket lasts longer. It's designed to resist gouging, abrasion, and rough usage. Next time get SUBWAY, the air hose recommended for all pneumatic tools including concrete breakers, rock drills, rivet hammers, chipping hammers, etc. Sizes from 1/2" to 1 1/4" in 50' lengths. Write for literature.

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trial contentment may be realized by negotiations between an employer and the union, with or without benefit of the blessings of NLRB.

Mr. Lundeberg has stated that Sen. Taft answered direct questions in a direct manner—that he (Taft) said that if the best interest of all involved was gained by private dickering between unions and employers, then that was quite the thing to do.

"The Sailor's Union is a trade union and not interested or involved in politics, which is what all unions should be," said Mr. Lundeberg. Senator Taft and Mr. Lundeberg agree thoroughly that industrialists and unions should work together in harmony for the best interests of the economic good.

Dismissal Asked In Cannery Row

The California Processors & Growers, Inc., have asked for a dismissal of National Labor Relations Board charges of unfair labor practices in violation of the NLRB act. It is believed that charges will be dropped due to new provisions in the Taft-Hartley Act.

It is contended that the CIO has not qualified for NLRB protection, by refusing to file newly required affidavits declaring none of its officials are Communists. Also it is contended that NLRB has no jurisdiction under the Taft-Hartley law over complaints filed prior to February, 1947.

The hearing which was postponed from September 2 to October 2, has now been postponed indefinitely, according to information received from the San Francisco regional offices of NLRB.

Industry Pattern In Copper Wage Pact

Ratified by approximately 1500 employees of Kennecott Copper Corp., Utah Copper division, a new wage agreement between the company and the International Union of Mines, Mill and Smelter Workers (CIO) loomed as a pattern for the entire metal mining industry.

A new contract, calling for a wage increase of 12 cents per hour and six paid holidays per year was approved. Acceptance of a similar wage pattern throughout the international was predicted by Charles R. Brooks, president of the union's Kennecott council. He declared the settlement to be better than in most major industries because fewer restrictions on holidays have been imposed.

Labor Suit Filed

First suit brought against a labor union under the Taft-Hartley law in Idaho is on file in an Idaho federal court. Carl Finke and George Finke, who operate a logging business at Southwick, Idaho, seek \$17,100 damages from Local 10-358 of the International Woodworkers of America (CIO) for alleged violation of the labor-management act of 1947.

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Lubricants are extremely economical for reason that they possess very long life and "stay-put" properties. A little LUBRIPLATE goes a long way.



Five Troubles Ahead?

Dan Hay, Portland labor relations consultant, says the following are a few of the tactics unions can be expected to employ in their efforts to ease around the Taft-Hartley law's restrictions:

1. Reliance on working arrangements without any written agreement.
2. Attempts to extend union security agreements for another year.
3. Avoidance of NLRB and resort to strike for recognition.
4. Offer of union-set wage scales and working conditions without any written agreement.
5. Elimination or modification of no-strike clauses.

Magnesia Contest

A contest to discover the oldest installation of 85 per cent Magnesium insulation still functioning efficiently is announced by The Magnesium Insulation Manufacturers Association. Sixteen prizes are being offered and the contest closes October 10.

Prize Furnace Contest

The Industrial Furnace Manufacturers Association announces a prize contest for the best original articles appearing in the trade press in the next year describing specific advantages obtained by the use of modern industrial furnaces, kilns or ovens used for heat treating, processing or melting. First prize is \$1,000, second prize \$300, third prize \$200. Articles may be either technical or semi-technical, but the equipment or process described must be commercially operative and of benefit to users of the industry's products.

First Packaging and Handling Exposition Slated for L. A.

The West Coast's first annual Industrial Packaging and Materials Handling Exposition is scheduled for October 29 and 30 in Los Angeles. Under the auspices of the Motor Truck Association of Southern California, and in cooperation with Los Angeles Chamber of Commerce, the exposition will be held in the Rodger Young Auditorium, with Harry E. Hassett, chairman of the sponsorship committee.

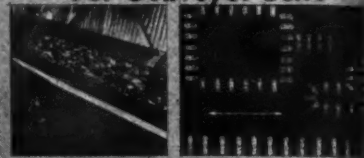
Since the event will take place at a time coinciding with the holding of the fourteenth annual convention of the American Trucking Associations, Inc., and since it is the first of its kind to be held in the West, it is expected that wide attention will be directed to the two-day meet.

The exposition, complete even to examples of scientific packaging for visual demonstration purposes, will highlight "engineered" freight handling, protective packaging and minimization of loss and damage through the use of satisfactory containers and packing, marking and labeling supplies and devices, materials handling equipment and safe handling methods.

Present Day Practice in Belt Fastening

Every man who has anything to do with the purchase, application or maintenance of conveyor, transmission or V-belts will find the bulletins listed below of considerable value in connection with belt fastening work. A knowledge of present day practice in belt fastening helps reduce the loss in machine hours due to belt failures caused by the use of the wrong type of fastener or improper application. We shall be glad to send any or all of them to you or to any of the men in your organization.

For Conveyor Belts



FLEXCO HD Belt Fasteners are used to make a "water-tight" butt joint in conveyor belts ranging from 1/4" to 1 1/2" thick and of any width. The view on the right shows the various types of rips that can be repaired with these fasteners and Flexco HD Rip Plates.

Bulletin F-100 gives complete details on how to fasten and repair conveyor belts.

For V-Belts



ALLIGATOR V-Belt Fasteners are now being widely used to fasten B, C and D, open-end V-belt of cross woven fabric core construction now being made by most belting manufacturers. The view at the left shows a typical application of these fasteners to a drive where endless V-belts would require dismantling the machinery to put the belts on the sheaves.

Bulletin V-205 gives complete instructions on how to use V-belt fasteners.

FLEX V Fasteners for A and B belts are also available for lighter duty V-belt drives. Ask for Bulletin V-14.

For Transmission Belts



ALLIGATOR Steel Belt Lacing is in world-wide use to make smooth, flexible joints in leather, rubber, balata, stitched canvas or solid woven belts up to 3/8" thick and as wide as they come.

Bulletin A-60 tells how to fasten and repair transmission belts.

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THE WEST ON ITS WAY

ARIZONA

POWER PLANT PLANNED—Sulphur Springs Valley Rural Electric Co-operative plans to start construction of a second power plant to cost \$213,000, and to be completed by March, 1948. . . .

METAL PRODUCERS TO BUILD MILL—Consolidated Metal Producers Corp. is planning to build a mill near Portal, Cochise Co., and undertake development of zinc deposits. . . .

ROBERTSON BUYS ARIZONA MINES—Purchase of two Northern Arizona silver mines for \$75,000 has been completed by S. H. Robertson of Monrovia, Calif. Property includes the Sky Chief and Christmas mines, both in Portland Canyon, sold by Charles Turner of Prescott. Six claims are included.

CALIFORNIA

NEW WEST COAST STEEL MILL—Columbia Steel Company, U. S. Steel subsidiary, will build a cold reduction mill with a capacity to produce over 300,000 tons of sheets a year, in the Los Angeles area. It is hoped that construction of the new mill will be completed by the end of 1949, according to J. Lester Perry, president of Columbia Steel.

TRACTOR FIRM SEEKS SITE IN RICHMOND—International Harvester Company, one of the nation's principal manufacturers of farm equipment, is negotiating for lease of mammoth Warehouse A at the wartime Richmond shipyards. Warehouse A, which contains 225,000 sq. ft., was recently purchased by Parr Richmond Terminal Corp. from the WAA as surplus property. International Harvester, according to company headquarters in Chicago, plans to use the building as its main parts depot for the Pacific Coast area.

STEEL SHORTAGE DELAYS CHRYSLER PLANS—Shortage of steel sheets will delay plans of the Chrysler Corp. to build a new Dodge assembly plant in the San Francisco area. Construction was to have begun Aug. 1 on a plant at San Leandro with a capacity of 400 autos and trucks daily. The plant will employ about 3,500 persons. K. T. Keller, president of the Chrysler Corp., said he does not expect enough steel for capacity production will be available for many months, and the San Leandro plant will be delayed until the company's other production units reach capacity. . . .

SUNSET AGAIN PRINTED IN WEST—Sunset Magazine is once more printed in the West. For the past 10 years it has been printed in the east to obtain adequate press facilities. The three editions of the publication will be printed in the new plant of Pacific Press, Inc., Los Angeles. Composition, engraving and electrotyping will continue to be done in San Francisco. . . .

REVERE COPPER BUYS IN LOS ANGELES—Revere Copper & Brass, Inc., have purchased 12½ acres at Garfield and Slauson Ave., Los Angeles. Company officials in New York say no plans have been made for immediate construction. . . .

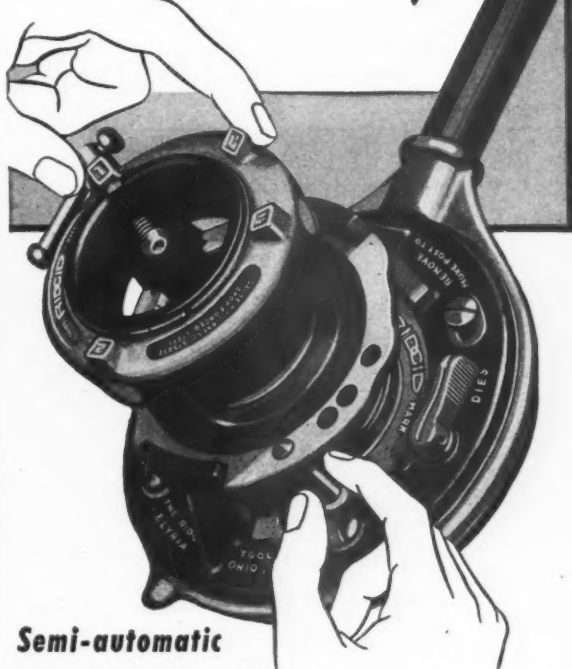
MANUFACTURING PLANT OPENS—Minnesota Mining & Manufacturing Co.'s new plant was to begin operation in Los Angeles in September. The plant, located at 6400 Randolph Street, cost \$750,000 and will manufacture adhesives, coatings and sealers for use in automotive and aircraft manufacturing and general industry. In addition, the plant will produce "Underseal," a rubberized protective coating which is sprayed on the underbodies of autos, trucks, buses and trains to reduce noise and prevent abrasion and corrosion. The one-story, reinforced concrete building includes 52,000 sq. ft. of factory and incidental warehousing space, and 32,000 sq. ft. for offices and principal warehousing facilities.

CONTRACT FOR PACIFIC COAST ENGINEERING—The U. S. Bureau of Reclamation has awarded an \$871,700 contract to the Pacific Coast Engineering Company of Alameda, as part of its program to control the Colorado River silt that threatens the flow of vital water to California and the Southwest.

NEW INDUSTRY FOR ALAMEDA COUNTY—Construction has begun on the \$150,000 Zinsco Electric Products Company's northern California branch in Oakland. It is expected that the plant, located at 19th and Adeline streets, will be completed by October.

NEW CLOTHING PLANT—Harry T. Rosenberg, R. V. Kirkland, and L. H. Carini recently announced the opening of their new firm,

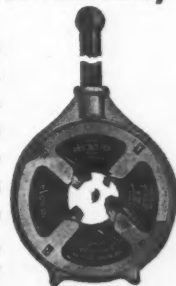
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THE WEST ON ITS WAY

RKC, Inc., of California. The plant, which will manufacture boys' slacks and sport shirts, is located in Orange, Calif.

CONTRACT FOR SHOOTING STAR—Lockheed Aircraft Corp. has received a \$2.5 million contract from Army Air Forces for 32 new P-80B "Shooting Star" jet propelled fighter planes, the company reported. The planes, to be furnished next spring, will be assigned to National Guard air units.

AMONG L. A. COUNTY EXPANSIONS—Draves & Patterson Metal Products Co., 140 No. Los Angeles St., is doing metal spinning. Charles H. Draves and Robert B. Patterson are partners. . . . American Implement Corp., 5058 Alhambra Ave., will shortly be manufacturing small farm tractors. . . . Pacific Metal Industries, Inc., 586 San Fernando Rd., is doing metal polishing, buffing, lacquer finishing, etc. . . . Continental Water Heater Co., Ltd., 1801 Pasadena Ave., is adding 5,000 sq. ft. for increased production of automatic storage gas water heaters.

CONVAIR PLANT 2 SOLD—C. W. Carlstrom of San Diego has purchased Convairst Plant 2, for \$1,050,000. The sale included the main manufacturing area of the plant comprising 1,518,700 sq. ft.

BEVERAGE CO. RETURNS TO OAKLAND—Moving back to Oakland after a temporary location in Richmond, the United Beverage Co., has just opened its new \$75,000 plant.

STEEL FABRICATED PLANTS FOR CALIF.—U. S. Steel is planning two big steel fabricating plants in California, one in the Los Angeles area and one possibly in Northern California. B. F. Fairless, president of U. S. Steel Corp., declared that U. S. Steel must have fabricating facilities on the Pacific Coast, and that the corporation's Geneva Utah iron mine would be adequate to supply both fabricating plants.

MORE LOS ANGELES COUNTY EXPANSIONS—Reesha Manufacturing Company opened recently at 35 East Magnolia Blvd., Burbank, Calif. The firm manufactures children's wear. . . . Cal-Sun, Inc., has begun production on men's and boys' T-shirt and sweaters at 719 East Pico Blvd., Los Angeles, according to an announcement by Myron E. Kronheim, president. . . . Pittsburgh Steel Co., Pittsburgh, Pa.,

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has acquired the Johnson Steel & Wire Co., 11641 Mona Blvd., which will be operated as a subsidiary of the Pittsburgh Steel Co., retaining the name of Johnson Steel & Wire Co. . . . Advanced Flocking Co., offices at 635 S. Kenmore Ave., plant at 3053 Rosslyn, has begun to do flocking, as well as baked enameling. . . . Kit Mfg. Co., Norwalk, has purchased the former Harvey Machine Co. plant on Pacific Coast Highway at Harbor Ave., Long Beach, and has moved there where 106,000 sq. ft. of building space and 80,000 sq. ft. of storage yard are available. Company manufactures trailers. . . . Los Angeles Metal Spinning Co., 3606 Avalon Blvd., is a new partnership formed by Ray Garcia and Ken E. Loring. . . . Frame-O-Steel Door Co., 909 N. Lake St., Burbank, has begun manufacture of overhead garage doors. Michael Berosen is the owner. . . . Diesel Pump and Electric Co., 11845 Teal St., Culver City, is making water pumps. J. C. Thompson is president. . . . American Cabinet & Fixtures, Inc., 2632 Humboldt Ave., has begun production of store, bar, and restaurant fixtures, and fine residential cabinets.

P.T.&T. EXTENDS TELEVISION WIRE — The Pacific Telephone and Telegraph Co. will begin construction of a coaxial cable between Los Angeles, Oakland and Sacramento within a year, which will allow transmission of television or telephone conversations. The cable will cost \$20,000,000 to lay between Los Angeles and the Bay Area, or about \$5,000 a mile, including construction and purchase of right-of-way land. A section of the cable was laid from Sacramento to Marysville last year and the line eventually will run to Portland and Seattle. The telephone company plans to link the coast circuit with a transcontinental underground network which can transmit a maximum of eight television programs or 1920 telephone conversations at the same time. The coaxial network now runs from New England to Florida and west to Texas. Construction of a leg from Texas to Los Angeles is now under way.

SHIPYARD BID — War Assets Administration announced that the Walter W. Johnson Co., San Francisco, submitted a high bid of \$72,500 for all buildings and personal property of the former Pollack-Stockton Shipbuilding Co., Stockton. The San Francisco firm declared in its bid that it now has the shipyard site under lease from the Port of Stockton and will use the yard for ship break-up for metal scrap if its bid is accepted. Ships are available to start operations at once.

FRAM CORP. HIGH BIDDER—With an offer of \$116,118 for the buildings and a portion of the equipment, Fram Corp. was high bidder for the former Arcrods plant near Pittsburg, California, in a War Assets Administration sale. The plant originally cost \$582,442. The government has an option to buy the land for \$7,731, which it has agreed to transfer to Fram Corp. The eastern firm manufactures oil and air filters and at peak operations plans to employ approximately 500.

SAN BERNARDINO PASTEBOARD PLANT — The Pacific Paperboard Co., will build and operate a \$1,000,000 waste paper mill at San Bernardino, California. Most of the original cost of the plant will be devoted to a machine which converts waste materials into merchantable paper for the manufacture of paper boxes, lathe boards, corrugated and other box materials.

STEEL TOWERS FOR SHELL—Two new refinery towers using stainless-steel in their construction are now in service at the Shell Oil refinery at Martinez. These columns were X-rayed and stress relieved and were required to have a joint efficiency of 95 per cent. The shorter tower is 10 feet in diameter and 30 feet high, and is built entirely of Jessup stainless-steel plate, 1 1/4 inches thick. The taller tower, a fractionating column, which contains bubble trays from top to bottom is 10 feet in diameter and 55 feet high, from seam to seam, and is made of 7/8-inch plate.

MANUFACTURERS MERGE — Consolidation of the manufacturing and engineering facilities of Musto-Keenan Company, pioneer Los Angeles and San Francisco marble tile and abrasive firm, and Bevil Company has been announced by Musto-Keenan. A new plant is now under construction on Musto-Keenan's Los Angeles property. Full production is expected by October 1st.

WAA GETS DEHYDRATION PLANT BID—E. H. Buller, Atwater, was high bidder for a grape dehydration plant eight miles northeast of Fresno, it was announced by WAA. Whether Buller's offer of \$15,050 will be accepted will be decided by the WAA zone administrator in San Francisco. It is planned by Mr. Buller to use the war surplus plant to dehydrate grapes, peaches and figs. The government paid \$80,000 for the plant.

HOLLISTER GETS AIRPORT—Mayor David T. Wright of Hollister, California, was notified by War Assets Administration that the city's application for the former Naval Auxiliary Air Station there had been approved. Hollister will receive without any cost to the city an airport on which the government spent \$3,820,334 for 220 acres of land and for improvements, including a control tower, administration building and some 16 other structures. The city has been operating the airport on an interim permit for more than a year, pending final disposal.



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SCREWDRIVER

A fast, accurate assembly tool—the Mall Screwdriver drives screws to uniform tightness at top speed. Its light weight (only 3 lbs. without cord), compact design, and convenient pistol type grip make for easy operation and reduce operator fatigue. Its adjustable single slip clutch can be set at a predetermined uniform tightness so that when the screw reaches this tension, the clutch automatically "slips"—eliminating stripped off screw threads and broken studs. It is ruggedly constructed with die cast aluminum housing, extra long brushes, hardened steel gears and self lubricating bearings. Available in two voltages—110-volt AC-DC or 220-volt AC-DC.

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POWER TOOLS**

THE WEST ON ITS WAY

* **WHAT'S NEW IN LOS ANGELES COUNTY**—Burndy Engineering Co., New York, has begun production of electric connectors at 2960 Leonis Blvd. . . . Record Machine & Tool Co. has moved from Bakersfield to 5742 Bandera St., Los Angeles, and will manufacture oil well tools. R. F. Fraley is gen. mgr. . . . Tempco Products Co., 2815 Los Flores Blvd., Lynwood, is manufacturing lawnmowers. . . . California Paper Converting Co., Inc., 403 S. Raymond Ave., Pasadena, is making paper boxes, steel rule dies, and doing die cutting. C. J. Zeller is manager. . . . Southeast Sash & Door Co., 841 E. Manchester Ave., is manufacturing sash and doors. . . . Nielsen Industries, 5746 Marilyn Ave., Culver City, is making marine telephone radios. R. Nielsen is the owner. . . . Milbore Co., 672 Ivy St., Glendale, has established a machine shop at this location, specializing in boring. . . . Monarch Saw Works, 8833 S. Alameda St., has begun manufacture of saws—circular and band. John Reasoner is the owner. . . . MacCallum Steel Corp., 216 E. Almond St., Compton, has been incorporated to do steel fabricating. T. MacCallum is president. . . . International Coil Co., 212 S. Los Angeles St., is manufacturing refrigeration blower coils. A. P. Harris is the owner. . . . Warner Bros. Studios, Burbank, will erect a 12-story building to include 10 sound stages, to be known as the Sam L. Warner Memorial Building. Estimated cost is \$6,000,000. . . .

KRAFT FOODS AT TULARE—A cottage cheese producing plant is now under construction at Tulare to be operated by Kraft Foods Co. for the Dairymen's Cooperative Creamery Association, member of the Challenge sales organization. At present curd is produced at Tulare and the creaming and packaging are done elsewhere. The new plant will enable the company to do the entire job there.

NEW COMPANY IN LOS ANGELES—The Kimberly Cast Products, Inc., iron and steel foundry has recently made its appearance on the Los Angeles scene, headed by Silas R. Kimberly. This new organization specializes in the production of alloy steel and stainless steel as well as many types of cast iron, utilizing the dried sand mold methods.

C & H TO BUILD REFINERY—California & Hawaiian Sugar Refining Corp. will build a bulk sugar storage plant at Crockett. Cost of the plant, capable of holding 100,000,000 pounds of raw cane sugar, is estimated at \$1,000,000 by Earl B. Wilson, company president. Primary excavation work has already started and Mr. Wilson said the entire project would probably take a year.

* **HARVEY MACHINE PLANT SOLD**—The Harvey Machine Co. plant at Long Beach has been sold for \$250,000 to the Kit Co. of Norwalk, Conn., manufacturers of trailers. Plant covers 106,000 sq. ft. . . .

ORONITE WILL EXPAND—Oronite Chemical Co., San Francisco, plans a plant expansion program which will double its present production rate of phthalic anhydride. Construction will start shortly to enlarge the company's Richmond plant. Principle present market for phthalic anhydride is as a base for alkyd resin paints. Oronite's plant was the first to derive phthalic anhydride from petroleum and it is the only operation of its kind on the Pacific Coast. George L. Parkhurst is president. . . .

AMONG SAN FRANCISCO EXPANSIONS—J. L. Stuart Co. is enlarging quarters at Eddy and Buchanan St. . . . Lehman Printing and Lithographing Co., \$750,000 expansion at 530 Second St. . . . Columbia Electric Mfg., enlarging quarters between Steuart St. and Embarcadero. . . . Ross Industries, Inc., a \$60,000 plant at 3776 - 24th St. . . .

U. S. LINES GETS NEW OFFICES—United States Lines Co. and its intercoastal subsidiary Panama Pacific Line have moved into new and larger quarters in the R. Stanley Dollar Building at 141 Battery St., San Francisco. . . .

HEWLETT-PACKARD DOUBLES CAPACITY—Hewlett-Packard Co., Palo Alto, manufacturers of electrical testing and measuring instruments, plans to double its present manufacturing space and potential capacity. Additional equipment and facilities will be installed for more difficult production. One new product will be equipment for monitoring and maintaining FM transmitters. Facilities will be completed toward the end of this year. . . .

* **ARABOL LEASES NEW QUARTERS**—Arabol Mfg. Co.; pioneer adhesive manufacturer that entered the West Coast with a San Francisco plant in 1935, has leased a three-story brick and concrete building at 1950 - 16th St., San Francisco, for its new Coast headquarters. New quarters will quadruple present facilities and new equipment will make the plant the most modern adhesive set-up on the Coast. . . .

HARVEY ALUMINUM COMPLETES FACILITIES—The Harvey Aluminum and Brass Division of Harvey Machine Co., Inc., 19200 So. Western Ave., Torrance, has announced that they have installed one of the largest banks of automotive screw machines west of the Mississippi River. Complete facilities for the manufacture of aluminum

and brass products—from smelter to finished product—are made available at the Torrance plant. . . .

NEW COMPANY TO MAKE TIMERS—The Timers Company, 1635 E. Nadeau, Los Angeles, has been formed by C. Ludwig Anderson, R. S. Mably and A. T. Ogren to manufacture timers and develop small electrical mechanical devices. . . .

DEISEL ENGINEERS MOVE—MacCallum Deisel Engineer Sales and Service, Compton, has moved to larger quarters in an adjoining building at 409-413 North Alameda St. Company specializes in rebuilding deisel engines and industrial power units. . . .

COLORADO

POWER FIRM MAY EXPAND—George M. Gadsby, president of Western Colorado Power Co., says his concern is ready to back up western slope expansion with extension of facilities. He said Western Colorado Power had spent \$1,200,000 in improvements during the past three years and added, "The use of electricity has increased several times over what we anticipated three years ago."

BERNSTEIN BROTHERS TO EXPAND—Bernstein Brothers, Pueblo, are planning an expansion involving new shops and warehouses to occupy a full city block. . . .

WELLS LAMONT CORP. TO BUILD AT FORT MORGAN—Wells Lamont Corp., second largest glove manufacturer in the U. S., has announced plans to build a plant at Ft. Morgan for glove manufacturing.

IDAHO

IDAHO POWER CO. TO BUILD—Idaho Power Co. has filed application with the Federal Power Commission for license to construct and operate a hydro-electric plant on Snake River, approximately three miles west of Bliss. The proposed \$17,000,000 development, when completed, will be a four-unit plant with total capacity of approximately 100,000 kw. Construction will be started immediately upon approval of the license application. The company has not abandoned its proposed hydro-electric project at Oxbow, north of Huntington, Ore., but the Bliss development will be given priority. . . .

PHOSPHATE INDUSTRY FOR SOUTHERN IDAHO?—Two University of Idaho staff members have reported it would be economically feasible to concentrate southern Idaho's vast deposits of low-grade phosphate rock into commercial phosphate products. Mining Professor Joseph Newton and Oscar Finkleburg, research fellow in metallurgy, said their tests indicated definite industrial possibilities through grinding and desliming the low-grade rock. They said the process would be as cheap as 10 to 20 cents a ton. . . .

CANNING FACTORY CONSTRUCTION UNDER WAY—The Gem Canning Co. of Emmett, has construction work well under way on its new canning factory to be of twin steel and aluminum prefabrication. Installation of machinery is expected soon. . . .

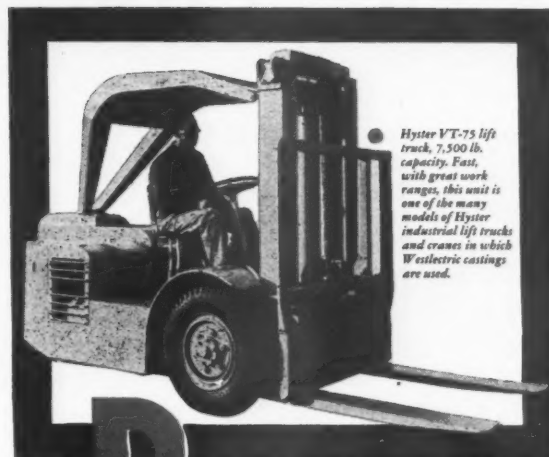
MINES TO REOPEN—The Ace Gold Mining Co., successor to the old New York mine near Elk City, has reopened as the largest gold producer in central Idaho. . . .

BARITE IS BIG IDAHO MINE PRODUCT—Barite, which has been mined chiefly in Missouri, is now one of Idaho's most promising mine products, according to John Coulter Steward, manager of the Sun Valley Barite Co. "From surface indications and geological evidence, the deposit of barite 16 miles from Hailey compares very favorably in size with any known deposit," Steward said. "In a few years, this Idaho deposit may well be of importance as one of the principal sources of barite for Western industry," he predicted. . . .

INDUSTRIAL LOTS FROM FORESTRY SERVICE—A congressional bill passed by the House and Senate authorizes the Secretary of Agriculture to convey nine lots in block two of the Riverside Park addition in Boise, for industrial development. These lots were originally donated to the forest service by the Boise Chamber of Commerce some years ago with the understanding that they would be used for warehousing and similar purposes. The forest service was unable to use the land in this fashion.

MONTANA

VET OPENS CONCRETE PLANT—John P. Peplinski, war veteran from Beach, N. D., has opened a concrete block plant on the Northern Pacific right-of-way and Highway No. 10, in Glendive. This is a new industry for eastern Montana.



Hyster VT-75 lift truck, 7,500 lb. capacity. Fast, with great work ranges, this unit is one of the many models of Hyster industrial lift trucks and cranes in which Westlectric castings are used.

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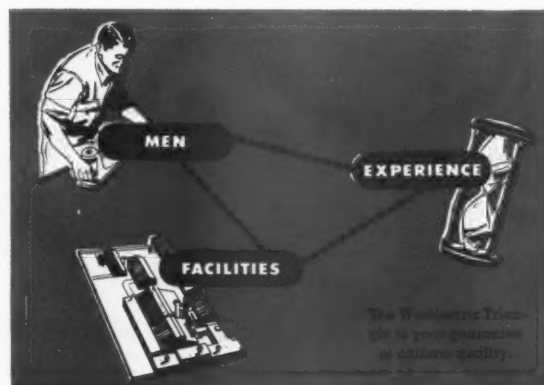
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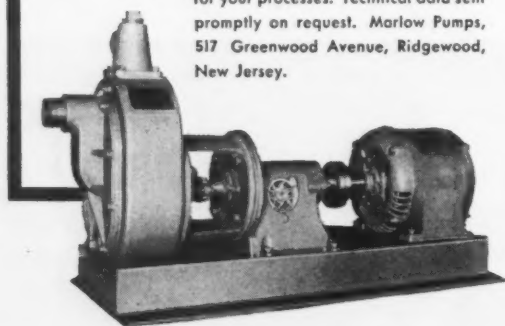
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THE WEST ON ITS WAY

FIRST MONTANA PAINT FACTORY—The Columbia Paint Corp., only operating paint manufacturer in the state, has begun production of outside white paint at Helena. A subsidiary of the American Chemet Corp. of East Helena, manufacturer of zinc oxide from raw Montana materials, the paint company likewise will use Montana raw materials. Development of an outside paint especially designed for Montana climatic conditions is under way.

CONTINENTAL PLANS BILLINGS REFINERY—Continental Oil Company announced plans for construction of a new refinery at Billings, Mont., to process its crude oil output from Elk Basin and other fields in Wyoming and Montana. The new plant will cost about \$8,500,000 and will have a daily capacity of 7,500 barrels. It will be situated on a tract of about 3,000 acres in the Southeastern section of Billings and will be constructed by Jones & Laughlin Supply Co. of Tulsa, Okla. Work is scheduled to start next spring.

CASEY GETS TIMBER—The sale of 2,800,000 board feet of Douglas fir saw timber on the Switch Back and Bowman units of the Indian Creek logging chance in Montana has been ordered to the Casey Mining & Equipment Co., of which J. B. Casey is general manager. The units are a part of a total area of nearly 15,000,000 board feet of timber originally offered for sale by the forest service, A. D. Moir, forest supervisor, said, adding that it is the largest single area ever offered for sale in the Helena national forest.

WAREHOUSE CONSTRUCTION STARTED—Construction of a warehouse for the Great Falls Transfer & Storage Co., is under way with Pappin & Son as contractors. The structure will be 60x100 and will be completed in about 60 days. It is located south of the Great Northern freight house.

LEHRKINDS GET MISSION ORANGE—Carl Lehrkind, "Sr.", and Carl Lehrkind, Jr., have been granted a franchise as Mission Orange bottlers in Bozeman. The Lehrkinds will distribute Mission beverages in Gallatin, Park and Meagher counties, the western and southwestern parts of Madison and Jefferson counties.

NEW MEXICO

CARBON BLACK PLANT FOR SALE—A Eunice, New Mexico, carbon black plant, designed to produce channel type carbon black and currently operated under interim lease by Panhandle Carbon Co., is offered for sale or lease by War Assets Administration. The facility consists of 168 burner buildings, processing building, bag storage building, warehouse, machine shop, change house, office building and a treater plant including a gas purification system, boiler house, office, laboratory, warehouse, spray ponds, and eight and one-half miles of 20-inch pipe. The land area of the property totals about 140 acres. All utility services are available and there are wells on the site. The property also includes 18 five-room frame dwellings complete with baths.

CARLSBAD GIVEN AIRPORT—The War Assets Administration announced that the Carlsbad airport which cost the government \$3,304,024 to build for war use, had been transferred to the city of Carlsbad.

OREGON

STANDARD TO ERECT REFINERY—R. G. Follis, president of Standard Oil Co. of California, stated that the company may eventually erect a refinery on property owned by Standard in Guilds Lake area, Portland. He said Standard is developing a supply area in Rocky Mountain region at Rangely, Colo., and that the 200-mile pipeline now being laid from that field to Salt Lake City "may be the first link in a movement of crude oil into the Northwest." Mr. Follis indicated that with population movement westward, California soon will be consuming all the oil produced there, making it necessary to find new sources of supply for the Northwest. Regarding prospects of Northwest area as a producer, he said, "We would not be drilling wells in the area if we were not quite hopeful of finding oil." Each drilling costs about \$500,000. He revealed that when Standard purchased Guilds Lake site for erection of a California Asphalt Corp. plant, officials had in mind that Portland might some day become a refining center. He stated that postwar projections were speeded considerably, and that demand was up to 1952 expectation.

WOOD PRODUCTS CO. ORGANIZED—Formation of a new Oregon corp., Apex Wood Products Co., for the manufacture of prefabricated garden greenhouses, lawn arbors, trellises, and other wood garden products is announced by E. Gerlinger, president of the new

firm. Apex Wood Products Co. has factories in Salem, with main offices at Portland under the direction of Jack Rhine, v.p. and sales mgr.

COAST COATED PAPER PRODUCTION—West Linn, Oregon, division of Crown-Zellerbach Corp., now is producing the first coated paper to be made on the Pacific Coast at a West Linn plant on the Willamette River. Planning was carried on for three years, and \$5,000,000 worth of equipment was installed. All will go to publishers of Life, Time, and Fortune. A second machine will begin production this fall. A substantial share of additional produce will go to Curtis Publishing Co.—publishers of Saturday Evening Post and Ladies' Home Journal.

BIDDING DOUBLED ON TIMBER—The Associated Plywood Mills, Inc., won a Willamette national forest auction on approximately 5,500,000 board feet, mostly fir, located in the Fall Creek district, with a bid almost double the appraised value of the timber on sale. The successful bid was for \$73,286, with the total appraised value of the stand having been established at \$37,682.

HEADS SUPERSONIC COMMITTEE—Cyril Brownell of Umatilla was named permanent chairman of the Boardman Supersonic research center site committee, organized to promote the Boardman bombing range for location of a proposed \$500,000,000 laboratory to test flight at speeds faster than sound. Oren Allison, Pendleton Chamber manager, was named secretary.

WORK STARTED ON SAWMILL—Construction on a 40,000 to 50,000 board foot capacity sawmill in Reedsport has been started. Present plans call for operation of the mill to begin this month, according to Charles Manschreck, first general mgr. of the Bridge Lumber Co.

WEYERHAEUSER SULPHATE MILL PLANNED—Weyerhaeuser Timber Co. plans to construct a sulphate mill on the site where the firm is now erecting a lumber mill at Springfield, Ore. J. P. Weyerhaeuser, president, said the new sulphate plant is another step in the company's plan of integrated wood utilization being worked out in its various manufacturing plants. The sulphate plant was tentatively expected to be worth \$6,000,000.

ARROW TRANSPORTATION SOLD—The Arrow Transportation Co., largest Pacific Northwest petroleum trucking concern, has been sold to the Rogers Cartage Co. of Indiana. H. C. Griffin, Chicago, has come to Portland to become president and manager of the company.

KLAMATH FIRM BUYS SAWMILLS—The Klamath Lake Moulding Co. of Klamath Falls has purchased the sawmill properties of the Big Lakes Box Co., pioneer Klamath lumber manufacturing concern. The new owners will assume possession of the plant on the shore of Lake Ewauna when they complete their present lease and operation of the Wheeler Pine Co. mill on upper Klamath Lake. Big Lakes Box Co. will continue operation of its old plant for at least several months.

SURPLUS PLANT PURCHASED—War Assets Administration has announced that the trainee building, located at the west end of the Ross Island bridge in Portland, and used by Commercial Iron Works as an industrial school during the war, has been sold to Manufacturers Engineers Co., and Powder-Power Tool Corp., new Portland firms.

CONSTRUCTION ON TERMINAL—Construction on a \$50,000 Eastern Oregon branch terminal and repair shop for the Silver Eagle Transport Co., has started in Baker. The new plant is to be a single story steel and concrete structure.

PAC. T. & T. PLAN BUILDING—Pacific Telephone & Telegraph Co. plan to construct a \$4,000,000 building in downtown Portland to house long distance and other operating equipment. The 11-story building will be steel frame and fireproof with ceramic tile exterior. It tentatively has been named the Oak Street Building. Actual construction will not start until next year, according to F. D. Tellwright, general manager for Oregon.

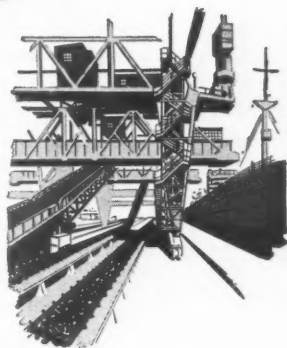
COOS BAY PROJECT—Army engineers have announced a proposed appropriation of \$1,000,000 for a Coos Bay rivers and harbors project would be used in dredging a deep channel for large vessels to enter Coos Bay Harbor. The appropriation has been recommended by a Senate appropriations subcommittee on rivers and harbors. It has not yet been approved by either house of Congress.

CABINET PRODUCTION UNDERWAY—Production of hardwood radio cabinet and furniture panels is underway at the new plant of the S. M. S. Wood Products Co. at Beaverton, Ore., a concern headed by Sherl M. Smith of Portland. Also scheduled for manufacture soon is a line of curved seat back panels. Plant occupies a building 70x140 ft. of steel frame and aluminum siding.

PORTLAND EXPANSIONS—Fibreboard Products, Inc., has let the contract for their new \$400,000 plant. Construction will start immediately. . . Industrial Air Products Co. has purchased 6.2 acres of land and will build a \$50,000 acetylene plant. Work is also progressing on the \$100,000 expansion of their oxygen plant. . . Dad's Root Beer Co. will build a \$100,000 bottling plant on newly purchased land. . . The Mixermobile Mfg. Co. has completed their new 75,000

Conveyor speed doubled, \$12,000 labor saved with Farval

IN a plant with 110,000 feet of coal conveyor, the company employed 4 men per shift to hand-lubricate the 650 bearings on 17 conveyor drive units. Bearings frequently heated up or failed between oilers' visits. Other bearings were neglected while those in trouble were being nursed along. Conveyor speed had to be reduced and coal delivery slowed down.



FARVAL—Studies in Centralized Lubrication No. 92

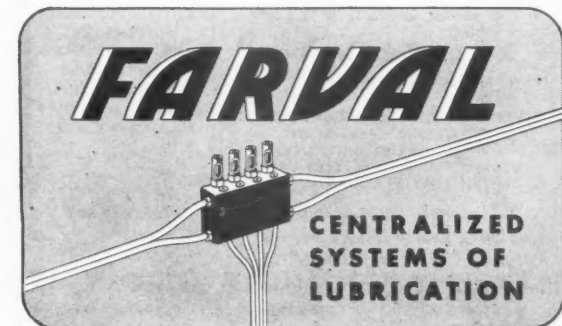
Then Farval was installed. Twenty-six manually operated centralized lubricating systems were adequate to serve the 650 bearings. Since then there has not been a single bearing failure due to lack of lubrication. Conveyor speed has been stepped up from 300 feet to 600 feet per minute, and coal delivery approximately doubled. And it requires only 2 men per shift to operate the 26 Farval systems—an annual saving in oiling labor alone of more than \$12,000.

Thousands of Farval Centralized Systems of Lubrication have been installed in industry. In coal preparation plants, for example, Farval serves Conveyors, Feeders, Crushers, Shakers, Vibrating Screens, Elevators, Washers, Jigs, Dryers, Mixers, Loading Booms and Drives.

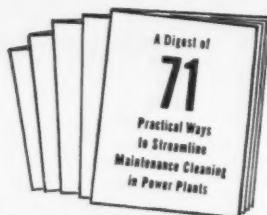
Farval is the Dualine System of Centralized Lubrication, with the Positive Piston Displacement Valve. This valve has but two moving parts and is fully adjustable; with a Tell-tale indicator at each bearing to show the job is done.

Write for Bulletin 25 for a full description of Farval. The Farval Corporation, 3269 East 80th Street, Cleveland 4, Ohio.

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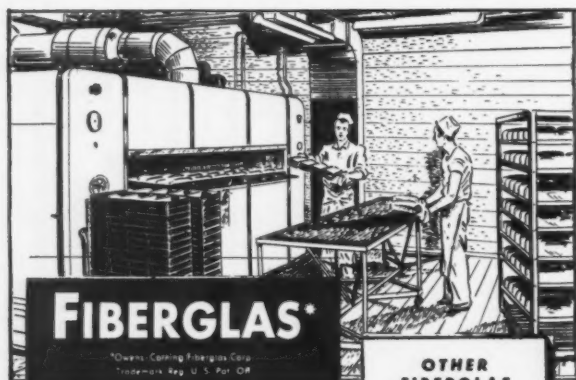
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THE WEST ON ITS WAY

sq. ft. plant, which augments the production capacity of this firm, and will not replace their present facilities.

A&P IN FISH BUSINESS—The Atlantic & Pacific Packing Co., owned by S. Einstoss, New York, has entered the Columbia River fish processing industry. The company will rely on four landing craft to transport salmon to a Warrenton packing plant and on a self-propelled barge to buy fish at river mouth or at sea. A salmon packing plant is being erected at Warrenton and a cannery may be added at Astoria. Emil Urell is Pacific Coast manager.

KAISER SHIPYARD SURPLUS—Oregon Shipbuilding Corp., large Portland yard of Henry Kaiser, has been declared surplus and turned over to WAA for disposal. Appraisal work will follow physical possession by WAA. Total cost of the 280-acre yard was \$20,673,990, but only land and buildings are listed as surplus as yet. Cost of these was \$10,639,050. Another declaration covering machinery and equipment is expected soon.

CONTINENTAL CAN TO BUILD IN PORTLAND—The Continental Can Co. has acquired a total of 57 acres in the industrial area of Portland for the construction of a can-making plant. Construction will begin immediately on what will be the third largest can manufacturing operation on the Pacific Coast. The plant will cost \$1,000,000 and will provide employment for approximately 200.

TRANSPORTATION COMPANY SOLD—The Arrow Transportation Co., largest Pacific Northwest petroleum trucking concern, has been sold to the Rogers Cartage Co., of Indiana, with H. C. Griffin of Chicago, the president and manager of the company with headquarters in Portland. Plans for a new Portland terminal have been prepared. The company proposes to build upon a six-acre tract now occupied by housing authority units. Several new trucks and trailers have been added to the fleet this year.

TEN NEW INDUSTRIES FOR PORTLAND—Ten new industrial concerns were established in Portland in the past two months, with 11 established concerns announcing expansions and construction projects costing in the aggregate \$183,550. Armour and Co. has let the contract for its new meat processing plant to be erected on N. Columbia Blvd., at a cost of \$298,500.

REDMOND MAKES CHEESE—Manufacture of cheddar cheese has started at Central Oregon Cooperative creamery, which has just completed its new cheese plant. Plant capacity is 1,800 pounds per day, but is not expected to be reached for some time.

FOREST SERVICE PLANS LOGGING EXPERIMENT—Bids have been opened in Portland on 7,560,000 feet of timber having an appraised value of \$16,284 which will be logged as a major improvement in timber cutting, the first on a large scale in the Pacific Northwest, under plans of the U. S. Forest Service. The timber is located on five tracts in the Cascade head experiment forest of the Suislaw national forest on the central Oregon coast. Phil A. Bringle, chief of the experiment station's division of management research, said the cutting will be under supervision of the station with records kept to determine operating costs of various logging methods as well as annual records to show effects of the cutting and growth response of the remaining stand. Some areas will be cleared and in others there will be various types of thinning. Similar smaller experimental studies are underway in the Deschutes, Siskiyou and Columbia forest.

BEVERAGE FIRM FOR NORTHWEST—The Vernor's Ginger Ale Bottling Company of Portland has commenced operations in its new plant. The company, headed by A. M. Prasil, is bottling Vernor's ginger ale.

NEW COMMUNICATION SYSTEM INSTALLED—The first modern single-sideband, suppressed carrier, powerline communication system has recently been delivered to the Pacific Power and Light Company by the Westinghouse Electric Corporation. To be used between Portland, Oregon and Pasco, Washington, it is now in service for the power company.

UTAH

MINE TO CLOSE—National Tunnel & Mines Co. has notified its 200 employees that its operations at Bingham, Utah, will cease as soon as mine equipment, including pipe and rails, can be salvaged from underground workings. Announcement was made by Frank A. Wardlaw, Jr., general manager of International Smelting & Refining Com-

pany, which controls and manages the mining property. He said the move has come as a result of cessation of federal premium payments on ore and because of impending higher labor costs. Mr. Wardlaw explained that the company has been receiving a premium of 8½ cents per pound above the market price for copper, 2¾ cents for lead and 9 cents for zinc.

OIL CO.-REFINERY MERGE—Inland Empire Refineries, Inc., Spokane, Wash., has been purchased by the Wasatch Oil Company of Salt Lake, and Henry D. Moyle has been named president of both organizations. The newly acquired oil corporation was organized in 1938 by stockholders of Wasatch Oil Refining Company. Mr. Moyle said the exchange of stock accomplished in the transaction will provide the Inland Refineries with the additional capital required to develop properties in Montana.

WAREHOUSE SOLD—The Bennett Glass and Paint Co. warehouse, glass finishing and polishing factory and garage at 221-233 West First South St., Salt Lake, has been sold to the Strevell-Paterson Hardware Co., Wallace F. Bennett, president and general manager of the Bennett Company, said recently.

RADIO TUBE PLANT SOLD—A Salt Lake City radio transmission tube plant, previously operated by Eitel-McCullough, Inc., has been sold to the Utah State Board Commission, it is announced by the War Assets Administration. The ten-acre land site, a main two-story factory building of light structural steel and four small frame buildings sold for \$155,000. Certain items of personal property sold for \$24,178.

OIL FIRM BUILDS RACK—A new loading rack, designed to fill four gasoline trucks simultaneously, has been completed at the North Salt Lake plant of the Utah Oil Refining Company. Costing approximately \$125,000, the structure also contains locker rooms for workers and an office for the supervisor.

RELIANCE TO CLOSE—Reliance Manufacturing Co. has announced it will close its Wasatch plant at Manti, 120 miles south of Salt Lake City, on completion of present contracts. The plant, located in the old Manti armory, served as a parachute factory during the war. It was converted to peacetime production of men's work jackets.

NEW STEEL UNIT OPENING—Structural Steel & Forge Co. will double its present steel fabricating capacity at Salt Lake City with the opening of a new unit this fall. Most of the steel framework has been completed on the new building, which is 670 feet long and 80 feet wide. The structure is expected to be completed by the middle of October.

TO BUILD WAREHOUSE—The Nelson-Ricks Creamery Co. will erect a new brick warehouse near their present plant. The project will cost approximately \$50,000.

TESTING RUNS BEGIN—Thermoid Western Co. will begin testing runs at its \$2,250,000 plant at Nephi. It is expected that a trial production run in the flat belt department of the rubber products plant will be possible soon.

WASHINGTON

LABORATORY BRANCH ESTABLISHED—The Pittsburgh Testing Laboratory of Pennsylvania have established a branch laboratory in Seattle. The company is the largest of its kind in the United States.

NEW A.A. MGR.—H. G. A. Meili announced as Northwest sales manager for American Airlines in recently opened offices of the company in Seattle.

PLANT FOR RENT—Part of the huge Renton plant of the Boeing Aircraft Company, where B-29s were turned out during the war, is being offered for rent by the War Assets Administration. The agency said that approximately 400,000 square feet of space suitable for manufacturing purposes will be available. The remaining 1,500,000 square feet will be retained by the Army, Navy and WAA. During the war, the \$14,344,000 plant built bombers for both the Army and Navy.

TRUCK BODIES ON ASSEMBLY LINE—Truck bodies will soon be rolling off a Renton assembly line on a mass production basis as a result of a recent contract negotiated by the Orillia Body & Machine Works, according to W. W. Barry, president of the concern. The firm has secured Northwest manufacturing and distributing rights for a new type all-metal body designed and engineered by the California Body & Trailer Manufacturers of San Francisco.

HANFORD EXPANSION PROGRAM—General Electric Co. has announced an expansion program for Richland, Wash., residential area for the Hanford plutonium plant, to accommodate an estimated increase in population from the present 15,000 to a minimum of 25,000.



"Industrial Wheels
Help Industry Roll"

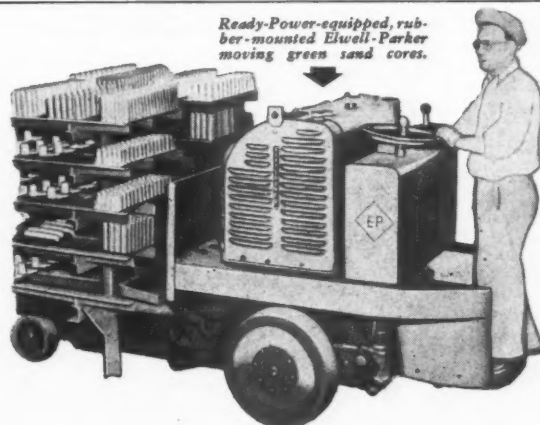
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Wheels for 10 to 16 inch outside diameters. Suitable for carts, wagons, wheelbarrows, scooters, trailers and a wide variety of slow and high speed uses.

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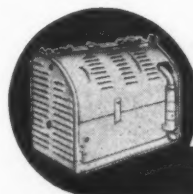
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To remove air or dampness in any material or from any container is the chief purpose of Hetzel Vacuum Pumps but the uses are so many no one ad can possibly cover them all. In every industry there are many processes which will do better in a vacuum - and there is no better vacuum pump on the market than Hetzel.

Investigate the many uses for a Hetzel Vacuum Pump in your business -- send for detailed information applying to your problems of de-aeration and de-moisturizing. HETZEL BROS.,
.... Engineers and Mfrs. of Hi-Vacuum Pump Units,
1972 So. Los Angeles St., Los Angeles 11, Calif.

HETZEL makes America's most efficient VACUUM PUMP UNITS

THE WEST ON ITS WAY

CONCRETE FACTORY PLANNED—A factory building will be constructed at 413-17 Westlake Ave. N., Seattle, for W. L. Steele. The structure, planned by Architect Raymond H. Peck, will be used to house the operations of a furnace manufacturing firm. It will be constructed of concrete blocks with a four-inch, poured-concrete floor and two-ply prepared asbestos roof.

MILL FOR TACOMA—Roy K. Ferguson, president of the St. Regis Paper Company, New York, announced plans for construction of a \$6,000,000 Kraft paper mill and multiwall bag plant at Tacoma, Washington, site of the company's large sulphate pulp mill.

PUMICE SHIPPING PLANNED—Establishment of a pumice shipping operation in Longview is in prospect following conferences with the county commissioners by representatives of Lavalite Products, Ltd., of Tacoma, regarding possible lease or purchase of a yard and plant site on the West Side highway near Olequa, north of Castle Rock. The company holds a large pumice deposit claim near the Timberline road on Mt. St. Helens. Plans are complete to start removing the pumice immediately, stockpiling sufficient quantities to meet industrial needs during the winter season when heavy snows in the mountains will close the deposits.

PACKERS LEASE CANNERY—Columbia River Packers' Association has leased Blue Ocean cannery, fish dock and receiving station at Bay Center, Wash., according to James Anderson, company manager there. He reported that the cannery has been renovated, ice capacity enlarged and fish dock equipped to receive tuna, crab and other sea food.

FACTORY ENLARGED—Lawrence G. Waldon, 514 Central Bldg., has finished plans for a second 40x80-ft. addition to the factory building of the Northwest Wire Co., 2750 Sixth Ave. S., Seattle. The first addition is under construction. With the second unit, the total floor space of the factory will be over 6,000 square feet.

YAKIMA FEED MILL—Construction is now under way for a \$70,000 feed mill for Barnes Grain & Feed Co., Fred Kobernik, owner, located at Second and Walnut Sts., Yakima. This mill is 56x65 ft. and has four bulk grain storage bins with a capacity of 300 tons.

WYOMING

WYOMING AUTHORIZED TO DRILL—The interior department, pressed by the nation's need for fuel, authorized private industry to drill for oil and gas on 1,000,000 acres of Wyoming land near the Jackson Hole national monument and Teton wilderness area. Secretary Krug emphasized that the leasing will be controlled so that "excess wells, hit or miss drilling, unnecessary road construction and other operations which destroy the forest cover are avoided."

BED OF TRONA TAPPED—Westvaco Chlorine Products Corp. has reported it has tapped a ten-foot bed of trona—natural sodium carbonate which can be converted to soda ash for industrial use—30 miles west of Rock Springs, Wyo. President William B. Thom said indications are that several million tons of extremely high purity sodium sequi-carbonate are available for mining and conversion to soda ash. Soda ash is used extensively in manufacture of glass, aluminum and chemicals. With the appearance of the trona, the Utah Manufacturers' Association foresaw increased opportunity for the state's industrial development, particularly for manufacture of glass. Ames K. Bagley, executive secretary of U. M. A., pointed out that no glass manufacturing plant is operated in the Intermountain area, yet all of the four most important ingredients for glass production, including silica, limestone, salt cake and now soda ash, can be found in or near Utah. He also said a tremendous market for glass exists within the region.

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popular industrial type.

HAWS

WESTERN TRADE WINDS

NEWS ABOUT THOSE WHO DISTRIBUTE AND
SELL INDUSTRIAL EQUIPMENT AND MATERIALS

Alfred L. Phelps has been promoted to the position of sales manager for the Oakland office of American Airlines, Inc.

Kingwell Bros., Ltd., San Francisco, manufacturers of bronze bearings and Western states representatives for Chrysler-produced oilite bearings, have appointed three new sales and service engineers to work with industry. Edward L. Unger will cover the southern California industrial area, working with Almquist Bros.; Tore Franzen will serve San Francisco Bay area, and William McFate will service northern California industry.

The appointment of Miles V. McDonald as general sales representative of Pacific Rubber Co., has been announced by Harry A. Wright, vice-president and sales manager. Headquarters will be in the Oakland factory of the company.



Lewis M. Bound, Jr., is the new West Coast manager of Tube Turns, Inc., Louisville, Kentucky. Mr. Bound's office is in San Francisco.

W. F. Cook named new branch manager at Long Beach for Grinnell Co., manufacturer and distributor of piping products and automatic sprinkler fire protection equipment. Mr. Cook was formerly sales engineer at the company's Los Angeles branch.

Gladden Products Corporation, manufacturers of air-cooled gasoline engines and aircraft hydraulic equipment, announces the resignation of William P. Stratton, Jr., as sales and advertising manager. Mr. Stratton resigned to accept a similar position with the wheel division of Roll-Rite Corporation, Oakland, Calif., manufacturers and distributors of industrial wheels and materials handling equipment.

Walter G. Dickey is new sales representative for Zeigler Steel Service Co., Los Angeles.

Harvey A. Mylander has been appointed district manager for southern California with headquarters in Los Angeles, and Arizona for the De Laval Steam Turbine Co., Trenton, N. J. Mr. Mylander was formerly associated with the General Electric Co., Schenectady, N. Y.

Ralph M. Trent, formerly manager of Pittsburgh and central Pennsylvania district of The Pangborn Corp., Hagerstown, Md., has been transferred to the Pacific Coast as manager of all the Pangborn business on the West Coast, with headquarters in Los Angeles.

D. B. Leonard has been named new sales manager of Northwestern division of Pacific Power and Light. His former post as assistant general manager of the Washington division, with headquarters in Yakima, was taken over by T. M. Keenan, Yakima.

Paul J. Sweazea of Rockdood & Co., will have full charge of the company's Pacific Coast sales, succeeding M. J. Larkin, acting supervisor. Mr. Sweazea was formerly in charge of the Chicago branch.

Norman Hayes of Graybar Electric Co., becomes district merchandising manager in Seattle, Washington.

Shell Chemical Corporation has announced the appointment of Barclay K. Read as assistant sales manager of their Western division with headquarters in San Francisco. Prior to his new appointment, Mr. Read had been with the company's eastern division in New York in a similar capacity.

F. M. Falge has been named manager of the General Electric lamp department's Pacific sales district with headquarters at Oakland, to succeed Morris C. Hixson who retired September 1, after serving as manager since 1934.

Shwayer Bros. of Denver announced the promotion of Dory McKendry, former traffic manager, as assistant to the national director of Samsonite sales.

Appointment of Huntley Castner as assistant sales manager for Owens-Illinois Glass Co., on the Pacific Coast with headquarters in San Francisco, is announced by William I. Cole, vice-pres. and coast sales manager of the Glass Container Division.

Campbell Bradt has resigned as assistant sales manager for Hunt Foods, Inc.

Hannifin Corp., Chicago, announces the appointment of The Ridley Co., 320 - 11th St., San Francisco, as its representative for hydraulic and pneumatic power and promotion equipment in Northern California. . . .

Lynn and Brooks have been appointed sales representatives for the Herbrand Corp., Freemont, Ohio, tool manufacturers. Sales offices are maintained in Los Angeles, San Francisco and Portland, Ore., to cover the Coast states, Arizona, Nevada, and western Idaho. . . .

William J. Ritchie has been appointed sales manager of the Western division of Evans Products Co. He will direct sales of wood products manufactured at Coos Bay, Ore., Vancouver, B. C., Grand Haven, Mich., and the Evans Molded Plywood Experimental Laboratories at Los Angeles. . . .



Jack E. Dykstra is the new sales manager for Schorn Paint Manufacturing Company with plant and offices in Seattle.

Anton Peck, formerly a special representative for Jamison Steel Corp., is opening a tool steel and die supply service for the Los Angeles area at a new warehouse at 4436 Long Beach Ave. A complete line of Jessop tool steels will be handled as well as a complete line of die supplies, including die sets, dowel pins, die springs and stripper bolts. . . .

The Bryant Machinery & Engineering Co., an affiliate and general distributor for Cleere-man Machine Tool Co., has been appointed Machinery Sales Co. exclusive distributors in Southern California for the complete line of Cleere-man precision jig borers and drilling machines. . . .

Charles A. Magill has been named field engineer for the Warner & Swasey Co. in northern California, with offices at 200 Davis St., San Francisco 11, Calif. . . .

Reed-Prentice Corp. of Worcester, Mass., have appointed James H. Wolcott manager of West Coast operations with offices at 2328 Santa Fe Ave., Los Angeles 11, Calif. He will be in charge of sales and service. . . .

(Continued on page 94)



• Following the merger of Gould Storage Battery Corporation of Depew, N. Y., and the Storage Battery Division of Philco Corp., a meeting of Pacific Coast sales engineers of these companies met in San Francisco recently. Standing from left to right are: F. B. Viller, Seattle; F. H. Pelletier and E. H. Barkus, Salem, Oregon; R. P. Anderson, Los Angeles; C. H. Hart, San Francisco; R. F. Franks, Los Angeles. Seated: H. S. Carlsen, assistant to the v.p., Depew, N. Y.; Herbert King, Pacific Coast manager, San Francisco.



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Trade Winds

(Continued from page 93)

Frank E. Bodine has been appointed Pacific Coast manager of maintenance sales for the Westinghouse Electric Corporation with headquarters in San Francisco. Former sales manager for Westinghouse at Salt Lake City and later sales manager in San Francisco, Mr. Bodine will serve the company's entire Pacific Coast district in his new duties. This area comprises all or parts of eight Western states, Alaska and Hawaii.

Announcement has been made of the appointment of the Consolidated Metals Corporation, 2619-2625 South Santa Fe Ave., Los Angeles, as distributor for Kaiser Corrugated Aluminum in southern California and the adjacent area.

Edwards R. Fish, Jr., Elliott DeForest and Joseph B. Ward, all of whom have been practicing independently as consulting engineers in Seattle, Wash., have joined their forces to establish the firm of Ward, Fish, and DeForest which will be able to provide complete industrial consulting services including finance, production, and marketing. The firm has employed Loring MacDonald, formerly of MacDonald & Co., to serve as contact executive.

Wheeling Steel Corp., Wheeling, W. Va., has announced the moving of its San Francisco district office from 907 Rialto Bldg., to 218 Sharon Bldg., 55 Montgomery Street. K. P. House is in charge.

Basil Fenn-Anstruther has been appointed representative of Iron & Steel Products, Inc., in California, Nevada and Arizona, with headquarters in Los Angeles.

Mason E. Kline, recently resigned vice-president and general sales manager of the Union Lumber Company, has announced the formation of M. E. Kline & Company, having offices at 625 Market Street, San Francisco.

Wm. S. Haivala, manufacturer of the Penetrating Concrete Processing Float, announces the appointment of the Charles R. Watts & Co., Seattle, construction, material firm, as distributors for the Haivala float in the 11 Western states, Alaska and the Hawaiian Islands. The

Watts company is appointing local dealers throughout the territory.

The United States Pipe & Foundry Co., Burlington, N. J., has announced the following changes in its sales department personnel: In the San Francisco office, Raymond Hausman, formerly assistant Pacific Coast sales manager, has been promoted to Pacific Coast sales manager to succeed Robert W. Martindale, retired. P. King Farrington has been named assistant Pacific Coast sales manager.

Pitts & Loughlin, 718 E. 60th St., Los Angeles, has been named sales representative for the California chemical division of General Mills, Inc., and will handle the company's line of vegetable, animal, and marine fats and oils, as well as organic chemical derivatives.

R. D. Holcomb, formerly Pacific Coast sales manager of the Harnischfeger Corp., San Francisco, has been promoted to the post of general sales manager at Milwaukee, Wisconsin. L. M. Stout has been named southwestern manager with direction over both Los Angeles and San Francisco offices.

Charles H. Bodner has been appointed tool engineer and representative in the Los Angeles area of Kennametal, Inc., Latrobe, Pa.

The Kenwell Corp. is now located at 416 N. Glendale Ave., Glendale 6, Calif. Company represents manufacturers of industrial machinery and equipment, including Valve & Primer Corp., Chicago; Buffalo Hammer Mill Corp., Buffalo, N. Y.; and the Roylyn Corp., Glendale. S. Kenneth Weiser is pres. and general mgr.

Located at the same address, Harold E. Webb is operating his own firm, called Harold E. Webb & Co., to represent manufacturers of industrial and aircraft equipment, including Accessories Mfg. & Engineering Co., South Gate, Calif.; Electrol Inc., Kingston, N. Y.; Snyder Sales Corp., Los Angeles; and Waterman Engineering Co., Evanston, Ill. . . .

Ducommun Metals & Supply Co. of Los Angeles have been appointed distributors for the Aluminum Company of America.

THOMAS PRY TRUCK MOVES BIG LOADS EASY

*Pry it up on the Crow Bar Nose—
Roll it away on the Rugged Wheels!*

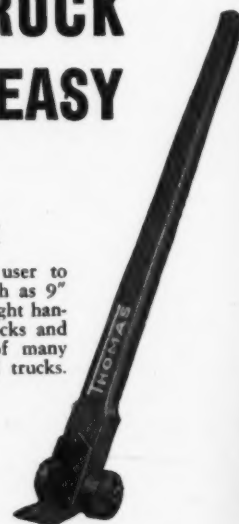
- Tremendous leverage
- Lifts loads as high as 9"
- Capacity up to 5000 lbs.
- Made in 3 sizes
- Thousands in use
- Easy to handle

Loads of freight too big or too heavy for regular 2-wheel trucks can be handled easily with Thomas Pry Trucks, particularly when used in pairs. Sharp steel nose slides under load. Tremendous leverage enables user to easily raise load as high as 9" from floor. Used by freight handlers on RR, trucks, docks and in mfg. plants. One of many Thomas 2- and 4-wheel trucks.

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Mfd by Thomas Truck & Caster Co.,
4742 Mississippi River, Keokuk, Iowa



NEW METHODS, MATERIALS, EQUIPMENT

That Will Help to Cut Your Production Costs

628

Portable Incinerator For Easy Waste Disposal

Industrial and institutional refuse may be safely disposed of, by use of the Pli-brico Portable Incinerator. It eliminates the hazards of burning refuse in the open or the nuisance of hauling it away.

It is a steel cased unit, readily portable. A steel stack of the proper height and diameter can be furnished as optional equipment. Pli-brico Jointless Firebrick Co., Chicago 14, Ill., makes it.

629

Nylon Rope More Durable

Nylon, formerly used during the war for glider tow ropes, has now entered the industrial field.

"Stabilized" nylon rope is claimed to be easier to handle, easier to splice, easier to knot, easier to whip or seize. The plastic

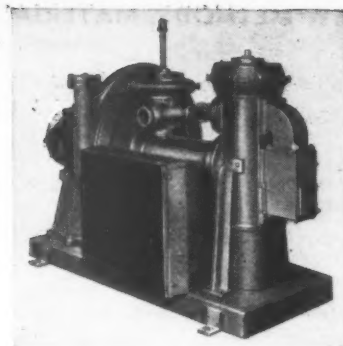
fibres of nylon rope are more durable, have better waterproofing and more resiliency, according to the Columbia Rope Company, Auburn, N. Y.

630

Improved Diluter For Industrial Plants

Major improvements in the McKee Cone-Type Diluters now enables this machine to be used both in industrial plants and for industrial gas manufacturing. An adjustable compensator mechanism enables the operator to make a richer mixture by opening the adjustable slides, permitting a portion of the gas to by-pass the gas cone. The amount of this "compensation" or by-pass gas can be either changed over the entire range by adjustment of the large slide, or can be adjusted at any point in the operating range by means of the small increment slides.

This diluter may be used for such ap-



plications as: central mixing stations for industrial plants, central mixing units for single large furnaces or ovens; to dilute high B.T.U. gases to lower equivalents for domestic or industrial distribution; and for standby or replacement of natural or manufactured gas. Eclipse Fuel Engineering, Rockford, Ill.

631

Wheels That Won't Let You Down

Offered for industrial trucks and carts is a new line of rubber-tired wheels in a range of sizes from 4 in. to 14 in. extreme diameter and from 1.75 in. to 3 in. diameter of tire section.

(Continued on page 96)

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The Only Manufacturer of
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Acid In The Entire West

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TAYLOR FIBRE COMPANY

NORRISTOWN, PENNA.

PACIFIC COAST PLANT: LAVERNE, CALIF.

Offices in Principal Cities



NEW METHODS, MATERIALS, EQUIPMENT

(Continued from page 95)

Wheels feature puncture proof "Zero Pressure" and sealed and welded ball bearing hub which cannot lose balls or get out of alignment. There are no nuts, collars or washers to wear or get out of adjustment.

Offered by Champion Iron Works, Detroit, Mich.

632

Explosive Proof Pressure-Switch

Meletron's model 310 pressure operated switch, now in a simplified design, is said to have explosive-proof design for hazardous installations or construction which prohibits tampering, by the operator, with the pre-set operating characteristics.

This device is widely used as a control mechanism in such fields as chemical processing, petroleum, food processing, heating and air conditioning, pneumatic and hydraulic systems, machine tools, aircraft, etc. Model 310 is one of Meletron's switches actuated by the pressure of liquids, air or gases. The Meletron Corporation, Los Angeles 38, Calif.

633

Electrode With Low Hydrogen Content

The extremely low hydrogen content of the improved Airco 312 electrode makes

possible the production of satisfactorily enameled surfaces without any heat treatment prior to enameling. This electrode can now be used on AC and DC reverse



polarity current, and preheating of the electrode is no longer required to obtain porosity-free weld deposits. These deposits can be obtained by using either the stringer bead or the full weave technique.

Recommended uses for Airco 312 are: welding high sulphur, free machining steels; welding hardenable steels where no preheat is used; welding cold rolled steels which normally exhibit excessive porosity when welded with conventional electrodes; weldments to be vitreous enameled after welding. Air Reduction Sales Co., New York 17, N. Y.

634

Synthetic Rubber Mixing Bowls

Mixing bowls for gypsum cements and plasters made of neoprene, a synthetic rubber, offer many advantages for the preparation and use of gypsum cements and plasters by pattern shops, laboratories, etc.

These Master mixing bowls are practically indestructible — they cannot be broken or chipped, do not corrode, and are not affected by water. Their light weight makes them easy to handle, and they can be bent into any desired shape to make pouring quick and convenient.

May be cleaned quickly by flexing them between the hands. All set cement or plaster breaks loose and falls out. Kindt-Colins Co., Cleveland 11, Ohio.

635

Low Cost Lathe Saves Time

The quick change mechanism of a new low cost 10-in. lathe provides instant fingertip selection of 54 threads and feeds — 45 are obtained by merely shifting two levers on the gear box, and an additional nine by changing the position of a sliding gear. Convenient tumbler gear lever reverses gears or disengages them from lead screw. By varying the gear train with change gears hundreds of additional



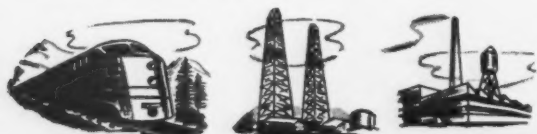
CAPS & COUPLINGS

• Chemicals... • Fuel & Oil... • Gases...

Raylyn caps and couplings are quick because a quarter-turn of the collar locks or unlocks the connection. They are positive because extremes of pressure, (—29" Hg to 11,500 PSI in the 1/4" size), vibration, hard usage, or hose rotation cannot disconnect it.

Raylyn couplings or caps with nipples are available in Aluminum Alloy, Brass, Alloy Steel, or Stainless Steel. Sizes range from 1/4" to 4" with connections to pipe, tubing or hose. Now used in many industries where hose lines, pressure lines and other applications require resistance to heat (+300°F) and cold (—65°F). All feature leak-proof gaskets, precision machining, and interchangeability.

Write for Catalogue M12 for full specifications. Our engineering department invites your inquiries for special applications.



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ALL-STEEL BELT CONVEYOR

(MOTOR DRIVEN)

IT'S NEW! This all-steel conveyor belt, built on an entirely new principle, is establishing a new trend in the conveying system field.

LENGTHS — 10 FEET TO 200 FEET
WIDTHS — 6 INCHES TO 48 INCHES



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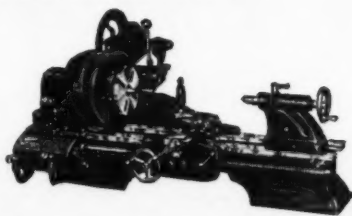
Also Gravity Roller Conveyors, Skate Wheel Conveyors, Forbes Hand Trucks, Wheels and Casters.

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MANUFACTURERS AND DISTRIBUTORS OF
MATERIAL HANDLING EQUIPMENT

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MADison 2478

threads and feeds are obtained for jobs such as metric threading, coal and wire winding and special tooling.



Other features include Timken tapered roller bearings, precision ground bed, 16 spindle speeds, back gears for extra power, instantly reversible power cross and longitudinal feeds, rapid change countershaft. Atlas Press Company, Kalamazoo, Mich.

636

Truck to Replace Slewing Cranes

Making a single fork truck quickly adaptable both for work usually requiring motorized slewing cranes and for that requiring standard fork-truck equipment is a new interchangeable motorized slewing boom attachment for Automatic fork trucks.

Boom is designed for maximum versatility. It is manually adjustable in outreach from 54 1/4 in. to 108 1/4 in.; vertically adjustable from horizontal to an upward

angle of 30 degrees; and it swings horizontally 60 degrees to either side of center. Offered by Automatic Transportation Co., Chicago.

637

Press Eliminates Speed Impact

A new 1,500-ton straight side hydraulic press, standing 38 feet high, and weighing 500,000 lbs., has been introduced by Vernon Allsteel Press Co., Chicago.

From an engineering standpoint, the press features fast advance to the work with automatic shift to full pressure stroke, thereby eliminating high-speed impact. Reversal is automatic on pressure or distance. Full electrical push-button control is provided for automatic operation with control stations for four operators.

The first press of this type completed will be used in the forming of heavy parts
(Continued on page 98)

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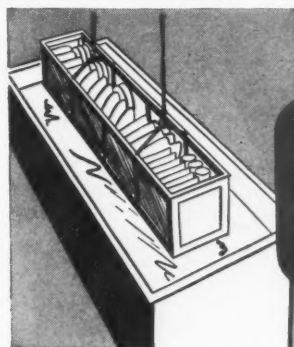
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NEW METHODS, MATERIALS, EQUIPMENT

(Continued from page 97)

for tractors. It is equipped with cushions in the bed, having a capacity of 500 tons and a stroke of 24 in. The die set alone weighs 74,000 lbs.

638

Flexarc Welder Announced

A new Flexarc lightweight engine-driven welder, designed for 200 amperes at 30 volts on the basis of 50 per cent duty



cycle, is available from Westinghouse Electric Corporation, Pittsburgh 30, Pa.

Dubbed "the Ranger," this DC welder can be towed anywhere a jeep can take it. The design characteristics of the generator provide easy striking and maintenance of the arc for shop quality welding on steel,

cast iron, alloys, hard surfacing aluminum and brass. The generator is direct-connected to a Hercules IXB engine.

639

Poppet Valve For Light Machinery

The new small poppet type valve designed expressly for operation of light machine tools, vises, fixtures, presses and other machinery adaptable to air control, is announced by the Ross Operating Valve Co. The construction is of brass and stainless steel, with a hi-carb neoprene valve seat. It is said to be within the lowest price range.

Both hand lever or foot treadle styles are available in locking, non-locking or neutral-position types. Ross Operating Valve Co., Detroit 10, Michigan.

640

Plastic Bonded Rod For Hard Facing

Wall Colmony Corporation announces the availability of new Colmony plastic bonded rod in five-pound coils.

This rod makes it possible to execute the Colmony Sprayweld process using wire metallizing equipment which will handle wires of various diameters.



The rod is composed of powdered colmony combined with a plastic binder. As the rod passes through the flame of metallizing gun, the plastic burns out, leaving the colmony particles to deposit on the surface being sprayed. Colmony Corporation, Detroit, Michigan.

641

Fork Truck That Pours Metal

Molten metal can now be poured from foundry ladles by means of power industrial trucks.

It is done with a ladle mounted on a base equipped with built-in sleeve pallets and a truck with a rotating head and fork. Driver controls all movements of the truck and operates the ladle from his platform at the rear of the machine.

This application comes from Elwell-Parker Electric Co., Cleveland, Ohio, who have equipped their standard truck unit of 4,000 lb. capacity, and in such a way that the rotating head is detachable so the truck can also be used for other purposes.

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For the plant operator
who wants to keep informed

2230

Welding Accessories Catalog Out—A new bulletin of welding accessories that will be carried in stock at each of the district offices of Metal & Thermit Corporation, is off the press. These accessories, along with their extensive line of electrodes for arc and gas welding, permit customers to get everything in the welding line, with the exception of the welding machine, from one source. *Metal & Thermit Corporation, New York 5, New York.*

2231

The Blast Cleaning Machine Is Hygienic—A completely revised edition of Catalog No. 214-A which describes the versatility of the Wheelabrator Swing Table, has been released. Detailed information is given on this airless abrasive blast cleaning machine that disposes of the slow, high cost and unhygienic disadvantages inherent in airblast room operation. Sections of the catalog are devoted to operating performance facts, ventilation requirements, installation photographs, list of users and design variations available to handling special cleaning applications. *American Foundry Equipment Company, Mishawaka, Indiana.*

2232

Building Savers—Sonneborn "building savers" for construction and maintenance has been released by L. Sonneborn Sons, New York. Floor treatments, concrete and mortar admixture, waterproofing and damp-proofing products, paints and protective coatings, caulking compounds, roof coatings and waxes are covered in the new edition which is designed to help maintenance engineers, contractors, and builders in product selection for all types of commercial, industrial and residential buildings. *L. Sonneborn Sons, Inc., New York 16, N. Y.*

2233

Know Your Laminated Plastics—Complete information on the manufacture, application, engineering and properties of all types of Textolite laminated applications, is published in a booklet from the Plastics Division of General Electric. The booklet contains all necessary information of the Textolite tubes and rods, bearing materials, silent gears, decorative surfaces, translucent sheets, nameplates, molded-laminated plastics, pressure laminated plastics, methods and fabricating laminates and ordering instructions. *General Electric Co., Pittsfield, Mass.*

2234

Metal in the Meat Industry—Also Metal in the Petroleum Industry and in the Dairy Industry, are three colorful booklets on Allegheny Stainless Steel. Each booklet covers specific applications, performance records, etc., pertaining to the industry. The literature also includes information on corrosion resistance, physical properties, fabricating procedures, and forms of Allegheny Stainless Steel available. *Joseph T. Ryerson & Son, Inc., Los Angeles 54, California.*

2235

Flameproofing Compounds Resistant to Laundering—A four-page folder giving technical information on the physical properties of Permaproof Series 200 flameproof compounds which are resistant to laundering and dry cleaning, published by Goodrich Company. The folder describes composition of the compounds, together with instructions on how they should

be prepared for treating fabrics. Equipment and methods required are also outlined. *B. F. Goodrich Company, Akron, Ohio.*

2236

Sheet Metal Article in Reprint—"Oxyacetylene Cutting in Sheet Metal Work" is a 12-page reprint issued by Aircro. The article, written by R. F. Helmkamp, Aircro's flame cutting specialist, is illustrated with 22 photographs and line drawings. The article covers fundamentals of machine gas cutting, equipment needed and cost of operation. *Air Reduction Sales Company, New York 17, New York.*

2237

New Pension Plan—Plant and equipment depreciation vs. employee depreciation is discussed in a booklet on pension plans for employees. Instances of the way the problem of retirement may be solved can be obtained by writing *Guy S. Burris, Chicago 2, Ill.*

2238

Standard's Price List—A new listing of 874 standards, with prices slightly upward is available in Price List No. 4702 from American Standards. Additional revised standards approved since the January 1947 issue of all American Standards are included. Free of charge from *American Standards Assn., New York 17.*

2239

"Oil Is Going to Cost You More"—The economic value of oil purification in relation to increasing costs of finding and developing new oil fields is outlined in current issue of "Clean Oil," Vol. 3, No. 2. Brochure declares the cost of replacing our oil reserves is five times as high today as it was before the war — for every dollar spent before the war, the oil industry must now spend \$4.96 to find and replace our oil reserves. In this issue also is the case history of maintenance benefits realized by a national truck-freight firm whose truck-tractors are equipped with lubricating oil purifiers immediately upon going into service, and run 100,000 to 160,000 miles between maintenance overhauls. *Honan-Crane Corporation, Lebanon, Indiana.*

2240

Valve Specs and Data—Bulletin 235 gives specifications and operating data on all Hanna valves. The line consists of foot-operated and hand-operated valves for air and hydraulic lines, and speed control valves for use with air and hydraulic cylinders. *Hanna Engineering Works, Chicago 22, Illinois.*

MANAGEMENT ENGINEER —

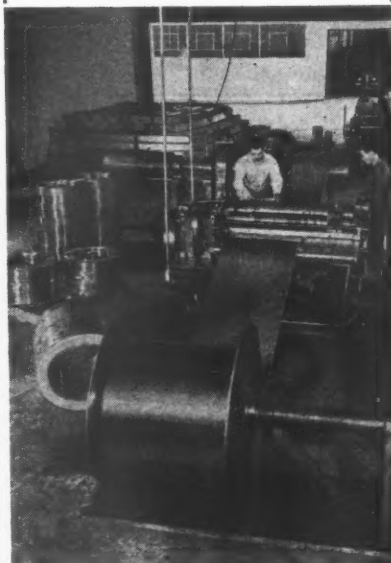
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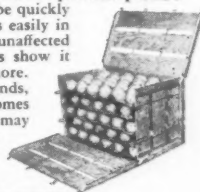
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